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BULLETIN 97

THE KAMIA OF IMPERIAL VALLEY

By E. W. GIFFORD

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THE KAMIA OF IMPERIAL VALLEY

BY

E. W. GIFFORD

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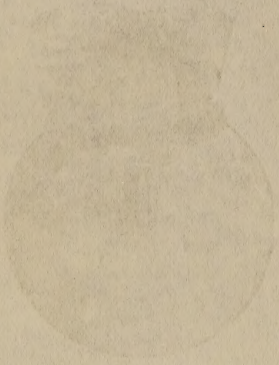


LETTER OF TRANSMITTAL

SMITHSONIAN INSTITUTION,
BUREAU OF AMERICAN ETHNOLOGY,
Washington, D. C., May 7, 1930.

SIR: I have the honor to transmit the accompanying manuscript, entitled "The Kamia of Imperial Valley," by E. W. Gifford, and to recommend its publication as a bulletin of the Bureau of American Ethnology.

Very respectfully yours,

M. W. STIRLING,
Chief.

Dr. CHARLES G. ABBOT,
Secretary of the Smithsonian Institution.

CONTENTS

	Page
Introduction	1
Habitat	3
Wells	9
Informants	9
Lineages	10
Population	16
Neighbors	16
Villages	18
Dwellings	18
Sweathouse	21
Agriculture	21
Wild plant foods	23
Salt	24
Tobacco	25
Fishing	25
Hunting	26
Cooking and eating	27
Boomerang	28
Bows and arrows	28
Quiver	29
Arrow straightener	29
Stone knives	29
War club	30
Stabbing pike and "flag"	30
Shield	30
Warfare	31
Woodworking	31
Fibers and cordage	32
Clothing	32
Face paints	34
Tattooing	35
Hair	36
Mutilations	37
Beads and pendants	37
Sandals	38
Postures	38
Baskets	39
Cradle	39
Granary	40
Burdens	40
Mortars and pestles	40
Metates and mullers	41
Pottery	42
Fire drill	42
Digging stick	43

	Page
Boats	43
Musical instruments	43
Games	34
Toys	47
Cat's cradle	47
Dogs	47
Birds and feathers	47
Eagle sacrifice	49
Chieftainship	50
Age terms	51
Childbirth	52
Umbilical cord	52
Twins	53
Menses	53
Nose piercing	54
Marriage	55
Transvestites	56
Funeral	56
Mourning ceremony	58
Personal names	61
Dances	62
Song cycles	62
Numeration	64
Divisions of the day	65
Phases of the moon	65
Months	65
Solstices	66
Eclipses	66
Stars	66
Color symbolism	70
Eschatology	70
Dreams	72
Jimsonweed	73
Shamanism	73
Witchcraft	74
Omens	74
Mythology	74
Origin tale	75
Deer, sheep, and antelope	81
The mountain Wiwotat	81
Ethics	82
Jokes	82
Origin of the Kamia	82
Conclusion	83
Bibliography	87
Index	89

ILLUSTRATIONS

PLATES

Page

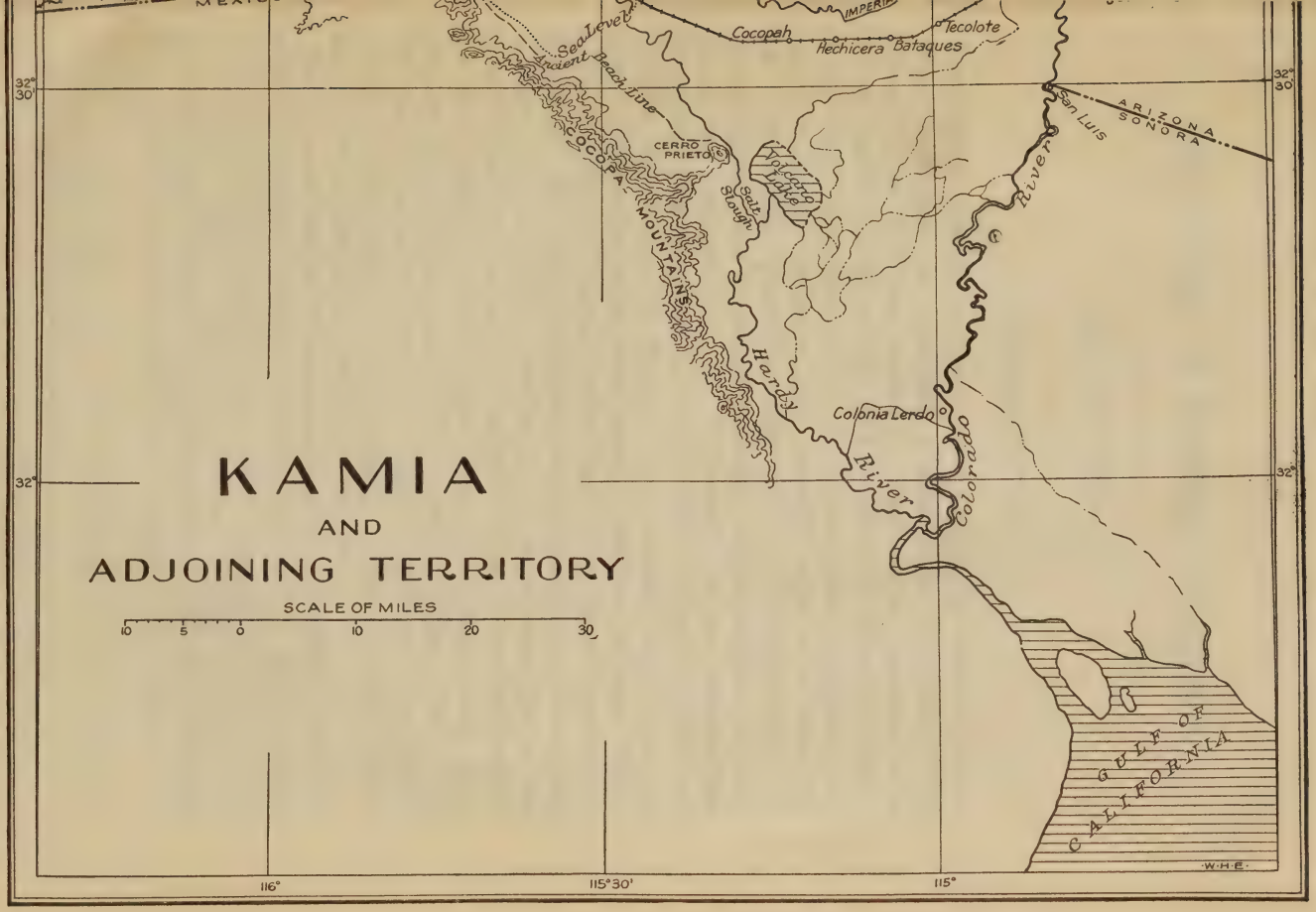
1. Map of Kamia and adjoining territory 1
2. A. *a*, 1–27080, feather and attached cord as used for attachment to stabbing pike or flag. *b*, 1–27081, four willow stick dice, about 6¾ inches long. *c*, 1–27076, willow bark bed for cradle. *d*, 1–27077, willow bark skirt. *e*, 1–27078, miniature willow bark blanket. *B*. Mockingbird cage, 1–27083. Width about 19 inches 32

TEXT FIGURES

Page

1. Schematic drawing showing arrangement of posts and roof timbers in a large house, about 40 feet square 19
2. Schematic drawing showing arrangement of posts, roof beams, and semicircular arrowweed wall of structure used in image ceremony .. 59
3. Native drawing of constellation Amuh 68
4. Native drawing of constellation Chiyuk 69

116°
115°30'
115°
114°30'
33°30'
33°
SAN
RIVERSIDE CO.
IMPERIAL CO
Salton Sea
(-235)
Ancient Beach Line
-100
Sea Level
Flowing Well
SOUTHERN PACIFIC R.R.
CALIFORNIA
ARIZONA
Kane Spr.
Ancient Beach Line
(-100)
SUPERSTITION MT.
Alamo River
Brawley
Sunset Springs
SAN DIEGO CO.
IMPERIAL CO.
COYOTE MT.
Sea Level
New River
Imperial
El Centro
Holtville
Blue Lake
Heber
Indian Wells
Yuha Springs
Mountain Springs
Calexico
CALIFORNIA
LOWER CALIFORNIA
Algodones
YUMA
CANAL


KAMIA
AND
ADJOINING TERRITORY
SCALE OF MILES
10 5 0 10 20 30
Sea Level
Ancient Beach Line
Cocopah
Hechicera
Bataques
Tecolote
IMPERIAL
CERRO PRIETO
COCOPA MOUNTAINS
Salt Slough
Hardy
River Colorado
Colonia Lerdo
San Luis
ARIZONA
SONORA
GULF OF CALIFORNIA
W.H.E.
32°
30'
116°
115°30'
115°

THE KAMIA OF IMPERIAL VALLEY

By E. W. Gifford

INTRODUCTION

The Kamia were the inhabitants of the Imperial Valley in southeastern California. At times they resided on the west bank of the Colorado River in Yuma territory. Their earlier sojourns there were probably during periods of low water in Imperial Valley. At any rate, the west bank of the Colorado near Algodones and Diegueños, Lower California, was evidently regarded as theirs, to visit whenever they pleased, although it was Yuma territory.

Linguistically, the Kamia are probably only subdialectically distinguishable from the Diegueño. Culturally, they are intermediate between the Diegueño and the Yuma, with a heavy preponderance of traits shared with the Yuma. It is assumed that they are a people of Diegueño origin, who moved down into Imperial Valley and came under the influence of the Yuma, from whom they adopted agriculture. How long the process of acculturation has been going on, there seems no definite way to tell. It would seem that a few hundred years would be ample to account for the Yuma traits which have been adopted. Indeed, there seems no inherent reason why a century would not be ample. The closeness of Kamia friendship with the Yuma is indicated by Whipple's statement that Pablo Coclum, "grand chief of the Cuchans"[1] (Yuma) in 1849, was a Kamia born on New River, probably about 1800.

The apparent overlap of Kamia and Eastern (Southern) Diegueño territory, the latter mapped by Spier[2] and said by him to extend to "the hills on the eastern border of the Imperial Valley,"[3] is not real. Spier's Eastern Diegueño informant evidently enumerated the Kamia gentes which he knew, along with the Eastern Diegueño ones. Indeed, he would seem to have regarded the Kamia as his kinsmen.

[1] Schoolcraft, Indian Tribes, 2: 116.
[2] Southern Diegueño Customs, figure A, p. 300.
[3] Ibid., p. 298.

The equally close relation of the Kamia to the Western (Northern) Diegueño is illustrated by the lineages (gentes) occurring with both peoples. This will be apparent to the reader by referring to the list of lineages (p. 11).

Perhaps it is an open question whether the Eastern Diegueño and the Kamia should be regarded as a single people or as separate peoples. Certainly they regard themselves as closely related and the intercourse between them was constant and friendly. If we regard them as one people, then it is obvious that those dwelling in the east have absorbed quite different features from their Yuma neighbors than have those dwelling in the west, who have received cultural traits from their Western Diegueño and Shoshonean neighbors. For the purposes of this paper the Eastern Diegueño and the Kamia will be treated as separate.

The extremely friendly relations of the Kamia with both Diegueño and Yuma made it difficult to learn of any definite line of demarcation for Kamia territory. Hence I have not attempted to draw the boundary on the accompanying map (pl. 1), as such probably never existed in the sense in which we conceive boundaries. It should be noted that the territory coincides with that tentatively assigned the Kamia by Kroeber.[4]

"The 'Quemaya' visited by Anza, Garcés, and Font in 1775 wore sandals of maguey fiber and descended from their own territory (which began at the mountains, in latitude 33° 08′, some 100 miles to the northwest of the mouth of New River in northeastern Lower California, and extended as far as San Diego) to eat calabashes and other fruits of the river. They were described as 'very dirty, on account of the much mezcal they eat; their idiom is foreign to those of the river' (Garcés, Diary, 1775, 165, 197, et seq., 1900)."[5] These people were the Eastern Diegueño rather than the Kamia of Imperial Valley, though both these peoples designate themselves as Kamia.

Fages, in 1781,[6] mentions hostility between the people of San Sebastian village and the Camillares of the mountains. This does not suggest the amicable relationships of the Kamia and Diegueño.

Whipple, in 1849, described the Comoyalis[7] as occupying the banks of New River near Salt Lake, and as distinguishable from the Cuchan (Yuma) "by an oval contour of the face."[8] Whipple says of his Kamia informant: "Pablo himself is a Co-mo-yah; he was

[4] Handbook of Inds. of Cal., pl. 1.
[5] Handbook of American Indians, pt. 1, p. 329.
[6] Priestley, pp. 179, 181, 225, 227.
[7] Schoolcraft, Indian Tribes, 2: 116.
[8] Handbook of American Indians, pt. 1, p. 330.

born upon the banks of New River (Hah-withl-high)." Possibly this is our Xachupai, mentioned beyond.

Whipple, Ewbank, and Turner published[9] two maps, which are interpreted as referring to the Kamia. Their map designated "Plate 2" was derived from the chief of the Yuma, who places the Comoyatz (Kamia?) on the east bank of the Colorado just above the Cocopa. (The Kamia live largely on the east bank of the Colorado at present.) The map designated "Plate 3" was derived from the chief of the Chemehuevi and places the Comaiyah (Kamia) on a stream (New River probably) apparently in Imperial Valley.

Major Heintzelman, who was stationed at Fort Yuma,[10] gives the population of Kamia on New River as 254. This was about 1850.

Bartlett's Comeya are the Diegueño.[11] Bartlett apparently encountered no Kamia in crossing Imperial Valley. However, he crossed during a period of low water.

Froebel mentions the Comedas (Kamia) as allies of the Macjave (Mohave), Cuchian (Yuma), Apache, and Simojueve (Chemehuevi).[12] In crossing Imperial Valley in 1855, however, he apparently encountered no Kamia settlement.[13] They were probably dwelling on the Colorado with, or adjoining, the Yuma.

The failure of several explorers to mention the presence of the Kamia in Imperial Valley evidently indicates how transitory and subject to flood conditions was their residence there.

The attribution[14] of the Kamia to the junction of the Hardy and Colorado Rivers (wrongly referred to as Colorado and Gila Rivers) is undoubtedly an error. Lieutenant Hardy's account of the Axua Indians seems to refer to the Akwa'ala.[15]

HABITAT

In historic times, at least, the Kamia have the distinction of having lived below sea level, for they have been an agricultural people inhabiting the low-lying Imperial Valley and the banks of the sloughs connecting it with the Colorado River just south of the California-Lower California boundary. Although they were in constant intercourse with their western congeners, the Diegueño, they seem not to have resided in the mountains of Diegueño territory, except during brief visits. The Diegueño visited them frequently to obtain agricultural produce. The Kamia seem also to have resided on the west

[9] P. 16, pls. 2 and 3.
[10] Heintzelman, p. 53, 1857.
[11] Bartlett, Personal Narrative, 2: pp. 7, 179, 1854.
[12] Froebel, p. 511.
[13] Ibid., pp. 530–535.
[14] Handbook of American Indians, pt. 1, p. 329.
[15] Hardy, Travels in the Interior of Mexico, pp. 345, 352, 368.

bank of the Colorado near Algodones, when they were at the river. The Yuma held the bank opposite them, and moreover, were evidently the true owners of the west bank.

In the north end of Imperial Valley lay the Salton Sink, at present partially filled with water, which constitutes the Salton Sea. The Kamia owned the saline southern edge of the most depressed part of Salton Sink. This was one of their sources of salt, the Kamia obtaining it from under the shallow water. According to the informant Narpai, some "Mission Indians" also came there for salt; presumably they were Shoshoneans, for Narpai said they were different from the Diegueño.

A Kamia origin tale refers to the Salton Sea as existing at the time of the entry of their ancestors into Imperial Valley. This is not unlikely, as the sea may have filled the Salton Sink several times. With the sink full it has been estimated that the sea would evaporate completely in 50 years, providing no additional water entered it and providing climatic conditions were as now.[16]

Imperial Valley has a rainfall of only 3 inches per annum, hence the Kamia, like the modern Caucasian inhabitants, depended upon the waters of the Colorado River. These waters entered the valley through sloughs, the principal modern ones being Alamo River and New River. At the time of the annual summer inundation by the Colorado River the waters flowed through the sloughs into Imperial Valley and inundated the lands bordering the sloughs. With the subsidence of the waters, the Kamia planted their crops in the mud. They also planted on the shores of the lakes in the valley. At Xachupai (New River [place]) there were grassy shores, which in American times were used to pasture cattle, driven down from the mountains.

The following notes on Imperial Valley are derived from a summary of the climatological data for southern California, published by the United States Weather Bureau.[17]

The narrow Coachella Valley [occupied by the Desert Cahuilla] broadens out into the wide and generally level Imperial Valley, which extends across the international boundary into Mexico. Much of the Imperial Valley is below sea level. The silt which forms the soil of the valley is estimated by geologists to be 1,800 feet in depth. Earthquakes are of frequent occurrence here. The valley contains the Salton Sea, a body of water formed in 1906–07, when the Colorado River escaped from its banks and coursed into the valley. Though the original area of the Salton Sea was about 440

[16] W. B. Clapp, The Surface-Water Supply of California, 1906. U. S. Geol. Survey Water-Supply and Irrigation Paper No. 213, pp. 30–34, 1907.

[17] A. H. Palmer, Summary of the Climatological Data for the United States, by Sections. Reprint of Section 13.—Southern California and Owens Valley. Data to 1919, inclusive.

square miles, it will entirely disappear in the course of a few years, as it is rapidly evaporating. Its water surface is over 200 feet below sea level. [Excess irrigation water which flows into it seems to be keeping the water level about stationary.]

At several stations in the Imperial Valley there have been periods of a year in which less than an inch of precipitation was recorded. A peculiar feature of the precipitation is the occasional occurrence in summer of showers of the Sonora type, due to atmospheric disturbances across the international border in Mexico.

In the Imperial Valley the summers are extremely hot and dry; the winters are mild, frost occurring regularly only during December and January, and snowfall is practically unknown.

With the aid of artificial irrigation tropical and semitropical agricultural products are grown in large quantities. The irrigation water is conducted from the Colorado River.

In degrees Fahrenheit the mean temperature of Imperial Valley is 71, the mean maximum 87, the mean minimum 55, the highest 121, and the lowest 18. The coldest month is December with a mean of 52; the hottest month is July with a mean of 90.

The Kamia farmed at the time of year when their crops were immune to frosts. The earliest killing frost reported up until 1919 is recorded for October 20, while the latest is recorded for March 29.

The direction of the prevailing wind is as follows: January N, February NW., March NW., April W., May W., June SE., July SE., August SE., September SE., October N., November N., December NW., year NW.

The Kamia apparently had no permanent villages, but moved about more or less, planting crops in one place, gathering wild vegetable products in another. There was no separate lineage ownership of lands, as the various lineages lived together more or less. Perhaps the necessity of moving about broke up any system of lineage ownership, if it ever existed.

In the period known to my informants the Kamia planted their crops in three principal localities: (1) the west side of the valley from Indian Wells (Xachupai) northward along the sloughs; (2) the east side of Imperial Valley from the latitude of Brawley southward along the slough called Alamo River; (3) at Huerta (Xatopet), Lower California, which bordered a slough running east and west (probably the east-west portion of Alamo River before it turns north), below the southern end of the range of sandhills stretching northwest and southeast.

Indian Wells (Xachupai), referred to as New River (place, not stream) by early American travelers, was located at about longitude 115° 30′ W. and latitude 32° 43′ N. This was on the west bank of

New River about 6 miles north of the international boundary.[18] Visible from Xachupai and near Blue Lake is Wikwiniʟ (hill black), near which planting was also done. The country about Wikwiniʟ yielded large quantities of mesquite beans and numerous jack rabbits. The slough (New River) which flowed through this region to Blue Lake and Salton Sink was called Xatwatwat. Its waters fertilized the land for planting, and when the overflow was ample there is said to have been considerable cultivation along its banks. In the 1860's of American travel there was a stage station at Indian Wells, where horses were changed. Various places along New River from the international boundary northward for perhaps 20 miles were Little Laguna, "New River" or Indian Wells, Big Laguna, Laguna Station (possibly Pozo Hondo).

The informant Narpai was born and lived some years at Indian Wells (Xachupai), where, as the name implies, there were dug wells. Then sufficient water came through the adjacent slough to flood the land for planting. However, the Kamia planted at Xatopet if the water was not high enough for planting near Indian Wells. A series of dry years, together with three to five deaths a year, led to the abandonment of Indian Wells.

The variable conditions of New River are indicated by the state in which it was observed at different periods. These variable conditions naturally determined Kamia residence or nonresidence in the region. In 1891 New River was a running stream. In 1863 and 1855 it was a series of pools. In 1849 it was a more or less running stream from some 20 miles north of the international boundary to 8 miles south. In 1846 it was practically dry. Between 1829 and 1849 it was dry. Between 1800 and 1829 it was apparently a running stream, for Pablo Coclum, "grand chief of the Cuchans" (Yuma), but by birth a Kamia, told Whipple in 1849 that he had been born on the banks of New River and it was a flowing stream at the time. In about 1829 he had moved to the Colorado River, and since that time until 1849 New River had been dry.

The informant Jose formerly planted on the east side of Imperial Valley, from the latitude of Brawley southward. The nixkai lineage, to which the informant Jose belonged, is shown by Spier[19] to have held land in this region. Jose spent his time between this region and Xatopet. An important planting place on the east side of the valley was Saxnuwai. It lay to the southeast of Holtville on the slough called the Alamo River. The name Saxnuwai refers to

[18] I am indebted to Mr. W. Egbert Schenck, who is preparing an ethnogeographical study of the region, for valuable suggestions as to the exact location of the Kamia sites. I had no opportunity to go over the ground with the Indians, who now reside at Yuma.

[19] Southern Diegueño Customs, fig. A, p. 300.

a species of owl. This place is evidently Spier's sĭtcárknʸĭwá (screech owl's house) which he places both north of Brawley and east of Imperial.[20] The informant Jose formerly farmed at Saxnuwai, as well as to the northward near Brawley. Jose never farmed at Xachupai. The Kamia chief Fernando headed the Saxnuwai people as well as the Xachupai people. At Saxnuwai the water flowed northward. At high water the land was inundated and planting followed.

As had happened at Xachupai (Indian Wells), deaths and dry years fell upon Saxnuwai. Then the Saxnuwai people invited all the Kamia to come there and confer with them. This was in the time of the informant Narpai, who did not attend, as he was somewhere south of Xatopet at the time. One man dreamed that it was raining and that he was planting as formerly. Two or three other men dreamed similarly. Finally, one man dreamed that there never would be again sufficient water at Saxnuwai and that the people would have to move permanently to Xatopet. The people therefore decided to live at Xatopet forever. No further attempt was made to plant in Imperial Valley. Fernando was the chief of the Kamia at the time of abandonment. At Xatopet he was later succeeded by his son Ortega.

Xatopet was called Huerta by the Mexicans. According to Narpai, there were many black Mexican eagles there. The informant Charles Hilmiarp was born at Xatopet. The name Xatopet applies to an east-west stretch of land fringing the slough and not to one particular spot or settlement site thereon, according to the informant Narpai. Narpai said the sandhills were visible from Xatopet and were apparently about 10 miles to the north; the Colorado River was about the same distance away. This suggests that the slough was the east-west portion of the Alamo River to where it turns north.

If the water was not high enough in Xatopet an earthen dam was built at least part way across the slough there, so as to cause it to overflow its banks and flood the basinlike depressions in which the planting was to be done. The name Xatopet means "dam."

The journey from Indian Wells to Xatopet took a day and a half to two days. Apparently, after the harvesting of crops at Indian Wells the people went to Xatopet and on to the Colorado River (Xatwat, red water) itself, where they sometimes resided near Algodones. For travel, water was carried either in gourd canteens or in a pottery jar on horseback in a netting bag.

Trouble with Mexican troops brought about the abandonment of Xatopet and the concentration of the Kamia at Algodones, which they refer to as Wikelel (their name for Pilot Knob, the hill close

[20] Southern Diegueño Customs, p. 302.

to the present Algodones). No Cocopa lived at either Xachupai, Saxnuwai, Xatopet, or Algodones.

Seven Wells, Lower California, was called Xatsin (water warm) by the Kamia. Kamia lived there at times. The informant Narpai had lived at Seven Wells. On the north side of the slough there ran the Kamia trail from the Colorado River to Imperial Valley.

Two places where the Kamia camped at times were Espayau and Michul, downstream from Algodones, which is the Mexican town on the Colorado River at the border of California and Lower California. Espayau was about 8 miles from Xatopet and opposite the town of San Luis, Sonora. The name means "eagle place," and was so called because of the regular nesting of eagles there. Cocopa country began beyond Michul, which is a few miles farther downstream than Espayau. Both Espayau and Michul lay in Yuma territory, as did Wikelel (Algodones), a third camping place at which planting was done in former times.

None of the Kamia rancherias or bands listed in the Handbook of American Indians [21] were mentioned by my informants. As listed they are Hamechuwa, Hatawa, Hepowwoo, Itaywiy, and Quathlmetha. However, I failed to inquire about them specifically. Possibly Hatawa is Xatauwil, mentioned below.

The Kamia made trips to the southward to collect akwil nuts. On one of these trips some were slain by the Cocopa. Another year the Cocopa slew some Southern Diegueño who were on the same mission. On at least one occasion the Cocopa attacked the Kamia and Diegueño at Indian Wells (Xachupai). The Diegueño were visitors there.

Yuha Spring, Imperial County, was a stopping place for travelers between Xachupai and the mountains of Diegueño territory. There was no planting there. The informant Narpai knew no name other than Yuha for it, but was not certain if that was the Kamia name, though there was a mountain near by, called Yoha by the Kamia. At the spring, water worked up through the gravel. Possibly this spring is the one called Xatauwil by the Kamia, but not identified.

A spring, possibly Sunset Spring, was the Kamia place called Xakwinimis. There was a tiny spring there, about 1 foot in diameter. This was on an important trail which ran from Campo and other points in Diegueño territory northeasterly across Imperial Valley to the Colorado River. Xachupai lay considerably to the south of this trail and was reached from Diegueño territory by another trail passing Yuha Spring. This trail branched from the Xakwinimis trail in the mountains.

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[21] Page 330.

A further description of Xakwinimis, as given by the informant Narpai, may aid in identifying it. The sandhills lie northeast of it; Brawley lies to the southwest. The mountain Winyuswen, which is visible from Yuma, can also be seen from Xakwinimis. To the north the mountain Wisol is visible. Modern Salton Sea lies west from there, and Mount San Jacinto (Wikayai in Kamia, Sakupai in Yuma) appears across the length of Salton Sea. Wiespa (Black Butte), in Lower California, is visible to the south.

Deer Peak of the maps is probably the Kamia place called Akwakxa.isi, where there was a little water and where deer drank. This lies southeast of Xakwinimis. A sort of tree, something like a willow, grows there.

Kane Spring, west of Salton Sea, and Niland, east of Salton Sea, were both beyond Kamia territory and neither had been visited by the informant Narpai.

The valley which lies east of the sandhills and through which the Southern Pacific Railroad passes was Yuma territory but was uninhabited.

WELLS

Like the Cahuilla of the Coachella Valley, the Kamia dug wells in the subsea-level floor of Imperial Valley. Indian Wells (Xachupai) takes its name from this custom, and there were similar wells at Saxnuwai and Xatopet. The wells were dug with a mesquite wood shovel (kamyak), which was shaped with a sharp stone. The wells were vertical walled and not so deep but that water could be dipped from them with a pottery bowl. The water was poured into ollas and reserved for drinking and cooking. It was never used for irrigation.

INFORMANTS

The data presented in this paper were obtained in late December, 1928, and early January, 1929. The field work was a joint undertaking of the Bureau of American Ethnology and the University of California.

The informants were six in number. The two principal informants were full-blood Kamia: Charles Beans, a middle-aged man, and Narpai, an old man; the former perhaps 60, the latter perhaps 80. Narpai's wife, a woman of perhaps 70, was a third informant; she was half Kamia, half Halchidhoma, and was born in Halchidhoma territory. Jose or Hatpa.inya, a very old full-blood Kamia, probably between 90 and 100 years old, was the source of a little

information. Charles HILmiarp, a reputed fugitive shaman of perhaps 50 or 55, proved less satisfactory, as he had resided in western San Diego County for many years. His father was a Kamia, his mother a Cocopa. He lived once at Xachupai. He is now short-haired, while the three men mentioned above wear their hair in the ancient long style. Lastly, Placidus Aspa, partly white, partly Kamia, was interviewed briefly. He was the source of certain published information on kinship and clans.[22] That concerning clans now proves to be erroneous, as the Kamia clans (or lineages) are not of the Yuma type but are of the Diegueño type.

The aged informant Jose was born on the west side of Imperial Valley, at WikwiniL (mountain black) near Blue Lake. He had never been a warrior, shaman of any sort, chief, or chief's assistant; nor had he eaten jimsonweed.

The informant Rosa Narpai was taken by her parents from the Halchidhoma country to Xatopet when she was quite young. There she later married Narpai, after the death of his first wife, who was a Yuma. Although Rosa traveled somewhat she was never in the territory of the Southern (Eastern) Diegueño.

The informant Narpai was born at Indian Wells. During his boyhood his people ranged between that place and the Colorado River. Sometimes, while camping at Xatopet, they went to catch fish in a slough near Calexico, when the water was subsiding. If the water were too low both at Indian Wells and Xatopet, Narpai's people repaired to the banks of the Colorado to do their planting. As a young man Narpai worked on the first steamboat plying between Fort Yuma and Fort Mohave.

LINEAGES

The mythology of the Kamia brings them from the north, though certain cultural and linguistic evidence points to the Diegueño region as their place of origin. One of the most convincing lines of evidence as to their close relationship with the Diegueño is their lineage organization. Each Kamia lineage is found among either the Eastern or Western Diegueño as well.

[22] Gifford, Californian Kinship Terminologies, p. 65; Clans and Moieties in Southern California, p. 156 ff.

Kamia	Eastern Diegueño	Western Diegueño
ᵉsun		esun (Gifford).
hiʟmiarp	hĭʟmiaʀp (Spier)	
kwaxa		gwaha (Gifford).
kwinyiʟ	kwainyi'ʟ (Spier)	
kwatʟ	kwatʟ (Gifford)	
lyacharp	yatcap (Gifford)	lya'taʀp (Spier).
nakuʟ	nakuʟ	
neeix or nehu	neeix or nehu	
nixkai	nixkai	
paipa	paipa' (Spier)	baipa (Gifford).
tumau		tumau (Gifford).

Three Kamia lineages previously listed[23] are kanihitc or kwinhitc, haiyipa, and hakisput. These were recorded in 1917 from informants at Campo in Eastern Diegueño territory. They were not recognized by my Kamia informants of 1928–29. The first may be kwinyiʟ and the second paipa. Spier recorded from an Eastern Diegueño informant the lineage hŭʟwá,[24] which was allocated to the eastern side of Imperial Valley. This name also was not recognized by my 1928–29 Kamia informants.

The Kamia call the Eastern and Western Diegueño Kamia also, distinguishing them merely as western Kamia. The informant Charles Beans regarded the Western Diegueño lineage names of baipa and gwaha as cognate with Kamia paipa and kwaxa. He was unacquainted, however, with Western Diegueño of these lineages and did not know that the gwaha lineage lived at Santa Ysabel, San Diego County.

The following Eastern Diegueño lineages, listed by Spier,[25] were unknown to the informant Narpai: waipuk, kwitaʀk, kwamai, miskwis, kwinehitc, hitʟmawa, oswai, ʟitc, kalyarp, xotum, saikur.

At Wikwiniʟ four lineages were reported as living. There they gathered desert products, and planted their crops on the neighboring slough. The lineages were kwatʟ, lyacharp, hiʟmiarp, and tumau. The lineage paipa did not live there. There were no lineage houses, but only ordinary family dwellings with a man at the head of each.

At Jacumba, in Diegueño territory, there were the same four lineages as at Wikwiniʟ, plus the nixkai and kwitaʀk lineages. All planted there, though the kwitaʀk lineage was not a Kamia lineage but a Diegueño one, which never planted in Imperial Valley.

[23] Gifford, Clans and Moieties, p. 168.
[24] Op. cit., p. 302; also Figure A.
[25] Ibid., p. 299.

Since Xatopet was an emergency planting place, when water failed in Imperial Valley, it was natural to find all lineages of the Kamia there.

On the Alamo River, near Brawley, the nixkai and kwatL lineages are said to have planted. This seems to verify Spier's allocation of these lineages to the region.[26] The latter lineage also planted along New River to the west of Brawley and Imperial. Two kwatL women living at the foot of Eighth Street, Yuma, in 1929, formerly lived in that region.

According to the Kamia origin story the ancestors of the lineages were created at and came from the sacred mountain Wikami, which is located by the Kamia in the north, and which is also the sacred mountain of the Diegueño. The Yuma and Mohave know it by the cognate name of Avikwame. The Kamia ancestors camped on the eastern side of Salton Sea, from which place they later scattered, some settling in Imperial Valley, others going to the mountains of San Diego County and becoming the Diegueño. The story says there was water in Salton Sink at the time of entry, not merely low salt land. The dispersal of the people from their camping place at Salton Sea was due to fear created by the appearance from the north of a female transvestite (Warharmi) and two male twins called Madkwahomai. These were the introducers of Kamia culture. This scattering of the original Kamia accounts for lineages such as kwaxa and paipa being found among the Diegueño as well as the Kamia, informants said. The absence of agriculture among the Diegueño was due to their having entered their habitat before the arrival of the transvestite and the twins, who were the bearers of the seeds of cultivated plants.

The Kamia lineages are strictly patrilineal and exogamous. The exogamy includes the mother's lineage as well as the father's lineage, and is extended to include members of corresponding Diegueño lineages. Individuals of the Diegueño lineages are regarded as cousins, or, if older, as uncles and aunts, or, if younger, as nephews and nieces.

There were no special lineage or sib names for women, as among the Mohave, Yuma, and Cocopa.

Within the memory of informants the lineages were not definitely localized. As one informant expressed it, "Next to a kwaxa house might be a hiLmiarp house." Pressure of questioning elicited from informants some shadowy legendary references to localization in different parts of Imperial Valley. The necessity of planting only where and when the river made it possible is likely to have been an important factor in destroying or preventing lineage localization.

[26] Op. cit., Figure A; also p. 300.

Meanings were obtained for certain of the lineage names: kwinyiL, black; kwatL, skin or hide; tumau, grasshopper; lyacharp, to desire to own something; ᵉsun, Gila woodpecker (*Centurus uropygialis*). The first is said to refer to the black cloud (akwi, cloud), the first black thing in this world; the second to skinning a sacrificed eagle; and the fourth to the desire to own the wildcat.

The Kamia lineages seem in part, at least, totemic. Certain totems (apparently called sikus in Kamia) are mythically associated with certain lineages.

Lineage	Alleged meaning of name	Totem
ᵉsun	*Centurus uropygialis*	*Centurus uropygialis.*
hiLmiarp	to know about moons	"wildcat" or "tiger."
kwaxa		Do.
kwinyiL	black	coyote; black cloud.
kwatL	skin	eagle.
lyacharp	to desire to own something	"wildcat" or "tiger."
nakuL		
neeix		Do.
nixkai		
paipa		
tumau	grasshopper	grasshopper.

The name tumau means "grasshopper," as with the corresponding Western Diegueño lineage.[27] That this insect is a totem is dubious. To be sure the Kamia do not eat grasshoppers and the Diegueño do; but the Kamia may be only following the culture pattern of their Colorado River neighbors, and not showing respect to a "totem." In fact, they use the grasshoppers for fish bait. In the Kamia creation story the grasshopper, along with birds and mammals, was made by the deities Chiyi and Chiyuk. The grasshopper was then given by the god Mastamho, evidently equivalent to the Mohave god of the same name, to the ancestor of the tumau lineage. There are reputed to have been 10 lineage ancestors upon whom the god Mastamho bestowed names and things. (The 10 original lineages enumerated by the informants did not include nakuL, which may be a late accretion.) Then he sent them forth to found the 10 Kamia lineages. All 10 ancestors wanted the nyimet ("wildcat" or "tiger") for theirs, but only hiLmiarp, lyacharp, neeix, and kwaxa received it. The nyimet is reputed to have all knowledge about the moons and agriculture, and was appointed by the god Pukumat to be the patron of farmers, or as the informant actually expressed it, "Pukumat

[27] Gifford, Clans and Moieties, p. 168.

made the nyimet the head of those who plant crops." Pukumat said to the nyimet, "You will study and know about the moons and thus know when to plant crops." The original nyimet was a man and the son of Pukumat. He was changed into feline form and his knowledge is believed to be embodied in his feline descendants. The wildcat is also important among the Diegueño mythologically.

The god Pukumat made nyimet responsible for the months and farming, at the same time voicing a threat as to what would happen to nyimet in case of famine. The god said: "If people get hungry and starve they may kill and eat you." He said this when nyimet was transformed from a man into a "tiger" (wildcat). The Kamia say that they and the Diegueño eat feline animals when they chance to kill them.

There is no belief that the four lineages which have the "tiger" as totem are descended from the totem. In fact the mythology is quite specific to the contrary, stating that such and such animal was given to the ancestor of the lineage. The myth states that when "tiger" went to the mountain Wikami he was human in form, but when he returned he was the first to turn into an animal.

Informants described two kinds of nyimet. One has dark transverse stripes on the upper body and legs but is pale beneath. The other is brown without stripes. Both are short tailed; both are killed and eaten at times; and both are reputed to know about the months. There is no association of red and blue with them, as with the wildcat in Eastern Diegueño mythology.[28] They live on rabbits and other small animals.

Without specimens the identification of the two forms of nyimet is well nigh impossible. Prof. Joseph Grinnell has suggested the possibility that the striped nyimet might be the ocelot (*Felis pardalis*) and the unstriped nyimet the eyra (*Felis cacomitli*).

The ancestor of lyacharp lineage is said to have desired to own the "tiger" too. His wish was granted by the god Mastamho. No specific reference was obtained as to how the lineages neeix and kwaxa came to have the "tiger" for totem.

Apparently the black cloud for which the kwinyiL lineage is named may be regarded as a totem, though the coyote (xaspa) is also associated with this lineage. Coyote seems to have bestowed only speed in running upon his totemites. He was not in any way associated with the calendar or agriculture, therefore he lacks the usefulness to human beings which wildcat is alleged to possess.

The prominence of the wildcat or "tiger" as totem of four of the Kamia lineages, together with the coyote as totem of one lineage,

[28] Gifford, Clans and Moieties, p. 169.

suggests the possibility of influence from the Southern Californian Shoshonean groups which have totemic moieties. These groups are the Cahuilla, Cupeño, and Serrano, and their totems are the wildcat and coyote.[29]

The lineage ᵉsun is said to have been the "first" lineage in the beginning of the world, when the birds were human beings. After the death of the god Pukumat they left the mountain Wikami and became birds. Thereafter the god Mastamho made people. The name ᵉsun is said to be that of the Gila woodpecker (*Centurus uropygialis*). It does not refer to the flicker (matkwo), nor to the "red-headed" woodpecker (wathu). The Gila woodpecker made no special contribution to human culture, as did the wildcat. It could only drill holes in wood. The informant Narpai said he had not seen the ᵉsun people kill their "totem," but there was no penalty if it were killed.

The lineage nixkai (nyukai) lived in five localities: Brawley region, Xatopet region, Algodones region, Wikwiniʟ or Blue Lake (i. e., Xachupai) region, and Jacumba region. It is doubtful that they occupied all five at one time. Low inundations and deaths caused movements from place to place. If the inundation waters were not sufficient in Imperial Valley planting in Xatopet or Algodones was necessary. The nixkai lineage, at times at least, may have been the sole planters at Saxnuwai.

The kwatʟ lineage must have been fairly numerous, or at least scattered, as indicated by the fact that Rosa Narpai of that lineage did not know if another kwatʟ woman (mother of Macham, a man) was a relative.

The lineage membership of various living Kamia is as follows:

Jose (Hatpa.inya) belongs to nixkai and is said to be the last individual of that lineage.

Charles Beans belongs to kwaxa, also his daughter Anna.

Charles Beans's wife belongs to paipa.

Charles Beans's wife's mother belongs to tumau and is said to be the only one remaining among the Kamia.

Harry (Takaiʙ), a Kamia living at Somerton, Ariz., belongs to sun. His wife is a Kamia woman named Akwal. He sings the song cycle djakwar.

A neighbor of Charles Beans belongs to lyacharp, as do his daughters.

Charles Hiʟmiarp (Kwekark), or Peg-leg Charlie, belongs to hiʟmiarp. His father was a Kamia, his mother was a Cocopa. Joe Yuma is also a hiʟmiarp. Xotcuxotc is a hiʟmiarp man who now resides at Campo, in Eastern Diegueño territory.

[29] Gifford, Clans and Moieties, pp. 177–201.

Rosa Narpai belongs to kwatL. Her mother was a Halchidhoma. Narpai belongs to kwinyiL, also his daughter (Mrs. Wilfred Parker).

Mike and Sandy Amador, brothers, belong to neeix; Sandy's daughter likewise. Her mother is a Yuma woman with clan name of hävchats. Sandy's son Harry, by an earlier marriage, belongs to neeix.

Mrs. Amador, an old woman living near the foot of Eighth Street, Yuma, belongs to the nakuL lineage. She formerly dwelt "near the Salton Sea." Another person of this lineage is Juanita Herbert of the Yuma Reservation. Her father formerly lived south of Jacumba, in Lower California.

Three Diegueño living at Yuma were allocated as follows:

Mrs. Vargas, nurse at the Yuma Agency Hospital, belongs to the nehu lineage of the Eastern Diegueño.

Latu Curo, a man who runs a chicken ranch on Yuma Reservation, is said to be a "Kamia," but Narpai did not know of what lineage. I suspect that he is a Western Diegueño, among whom the name Curo occurs.

Mrs. Jose Juarar, of Campo, belongs to the kwinyiL lineage, and is related to Narpai, so the latter said. Narpai said he had other relatives living in the mountains at different places.

POPULATION

Informants could give no definite idea as to the numbers of the Kamia in aboriginal days. There could not have been more than a few hundred. Their greatest decimation would seem to have been at the hands of Mexican troops and perhaps the Cocopa. Their proximity to the warring Yuma and Cocopa was not conducive to growth of population.

Heintzelman [30] gives the census of the Yum (or New River) Indians under the chief Fernando of New River as 118 men, 82 women, 54 children in 1849.

NEIGHBORS

To the east and west of the Kamia were friendly neighbors of Yuman stock, the Eastern Diegueño to the west and the Yuma to the east. To the south were the Cocopa, also Yuman, but enemies. In the mountains of Lower California dwelt the Yuman Akwa'ala, friends of the Cocopa, and consequently aligned against the Kamia and Yuma. It is doubtful if the Kamia had any but rare contacts with the Akwa'ala. To the north the lowest part of Salton Sink and

[30] S. P. Heintzelman, p. 53.

at times, Salton Sea, separated the Kamia from the Shoshonean Desert Cahuilla, who seem to have stayed closely at home. In fact, the Kamia say the Cahuilla were afraid to come near the Kamia farms.

The Kamia apply their name to the Eastern (formerly called Southern) Diegueño as well as to themselves. In spite of cultural differences they recognize the close relationship in language and blood. Although less in contact with the Western (formerly called Northern) Diegueño, they include them also as Kamia. The Kamia refer to the Diegueño as Western Kamia, to themselves as Eastern Kamia.

The Kamia also call themselves tipai, which means "person." This word applies to a single individual as well as to the population of a settlement, such as Xachupai.

The Eastern Diegueño as regularly visited the Kamia as the Kamia visited them. The two groups spoke the same language and were "one tribe," having been created together in the north, informants said. The Eastern Diegueño at Jacumba seem to have been in particularly close touch with the Kamia. From Jacumba to the Colorado River was a three days' journey, either on horse or on foot. Use of the horse did not accelerate speed, because of the necessity of carrying water as well as food. On horses the water containers were pots carried in netting bags (hatupul). On foot gourds were carried. The cold season was a favorite time for the mountaineers to visit the Kamia to obtain food from their stores of cultivated plants.

The Kamia visited their Diegueño kinsmen to obtain wild vegetable products, especially acorns. In addition to Indian Wells (Xachupai) and the sloughs, water was obtainable at a spring called Xatauwil (perhaps this is Yuha Spring) near the foot of the mountains about midway between Indian Wells and Mountain Spring. In traveling westward from the Algodones region this spring was reached at the end of the second day. The end of the first was on the desert, where recourse was had to the canteens.

Between themselves and their enemies, the Cocopa, the Kamia speak of a stretch of uninhabited territory, which varied in width from time to time, according to the movements of the tribes. However, they place as former dwellers in this no-man's land the Kohuana, who were originally friends of themselves and the Yuma. The Kohuana, they said, then allied themselves with the Cocopa, and in consequence were killed by united forces of Yuma, Mohave, and Kamia. Judging from the Spanish accounts the Kohuana (Cajuenche) occupied the habitable places in Imperial Valley in the latter part of the eighteenth century[31] and were hostile to the Diegueño

[31] Teggart, pp. 35, 37; Priestley, pp. 179, 181, 225, 227.

and presumably to the Kamia. At that time the Kamia were probably residing with their Diegueño kinsmen or with the Yuma, or perhaps had not begun their residence in Imperial Valley.

According to Narpai, the Cocopa lived on both sides of the Colorado and near the Cocopa Mountains in the west. Upstream lived the Yuma, beginning at Algodones. Indeed, Yuma and Kamia were intermingled at times.

The Kamia knew of a number of more distant tribes, although in some cases only by hearsay, never having had contact with individuals. Such were the Kiliwi of the Lower California peninsula and the Halyikwamai whom they reported to live on the eastern bank of the Colorado below the Cocopa.

The Yuma are allocated by Kamia informants to their present seat on the Colorado and also on the lower Gila River. They have been the friends of the Kamia, and, according to the Kamia, also friends of the Eastern Diegueño. The Kamia recall no quarrel of the Yuma with either themselves or the Eastern Diegueño.

The Halchidhoma formerly lived around Blythe, north of the Yuma, the Kamia said, but were forced by the Mohave, Yuma, and Kamia to move to the eastward, where they took up their residence north of the Maricopa, in central Arizona. There is some Halchidhoma blood among the Kamia as well as the Yuma to-day, and actually some Halchidhoma are married to Yuma.

The Kamia names for various tribes are as follows:

Kamiyai or Kamiyahi, Kamia, and Diegueño.
Kwichan, Yuma.
Amakhaba, Mohave.
Halchiyum, Halchidhoma.
Kapá, Cocopa.
Akwal, Akwa'ala.
Kowan, Kohuana.
Kwis, Shoshonean Mission Indians.
Chemeweu, Chemehuevi.
Yawapai, Yavapai.

VILLAGES

There were no true villages. Houses were scattered, sometimes being a hundred yards apart. With the death of an inmate a house was burned and the inhabitants moved elsewhere. I did not determine if they left the settlement altogether.

DWELLINGS

The Kamia dwelling (uwá, the generic term for house) was like that of the Mohave and Yuma. It was a rectangular frame building, thatched, and covered with heaped sand, warm in winter and

cool in summer. Its doorway was closed with a woven willow branch mat. Each family had its own house, usually of smaller dimensions than the chief's.

The sand covering is now no longer used, but walls and roof are now covered with mud (wasa) which hardens. This sort of house is a modern innovation, as with the Yuma. It is called ixhai.

An exceptionally large house was constructed by the chief. It might be as much as 40 by 40 feet in ground dimensions. The ceiling was low, however, usually being only 7 or 8 feet high. Sometimes tall men had to stoop a little.

Figure 1 shows the position of the main posts and roof beams. The doorway was near the middle of the east wall and was about 30 inches wide.

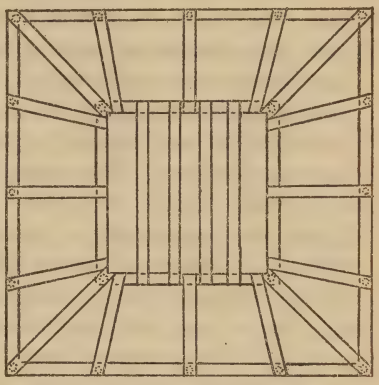

FIGURE 1.—Schematic drawing showing arrangement of posts and roof timbers in a large house, about 40 feet square

The main posts and heavy roof timbers were of cottonwood. Smaller sticks for the roof were of willow. Arrowweed was placed on top of these; then a final covering of sand which was also heaped against the sides. The sides were of arrowweed stalks placed vertically to a thickness of 6 inches and held in position by horizontal sticks which rested against the exterior face of the outer house posts which were planted about 2 feet apart. On the outside, pressing the arrowweed against the horizontal sticks, was the sand.

Holes for posts were dug with digging sticks. Sand was shoveled with a mesquite or screw-wood shovel with a blade. It was about 5 feet long, but the blade was only about 4 by 6 inches. The sand was not brought from a distance, but was shoveled from around the house.

For the construction of a chief's house he burned down cottonwood trees and burned the trunks into proper lengths. When all were ready he called on men to build the house, usually a two days' job. While receiving this assistance the chief fed the people. His wife or wives, assisted by other women, cooked for the workmen, preparing a profusion of fish stews, pumpkins, beans, maize, etc. Such a house was used by the chief for a dwelling. The obtaining of outside assistance by the chief was not peculiar to him. Other men had similar aid in house building, though their houses were not so large. They, too, fed the workers.

The whole family slept in the house, except for a very old person who was put in a small shelter outside. These small dwellings were

formerly sand-covered and rectangular, never round. I describe a shelter which an aged man occupied at Charles Beans's establishment.

A low rise of ground near a slough, or near the river, was considered a desirable location for a house. Sometimes, however, a house so located was reached by the inundation waters. Then the inmates were forced to abandon it and build on a higher spot. I could learn of no artificially raised sites. Such waterside locations took care of the drinking water problem if wells were lacking, for the Kamia drank the muddy slough or river water. Charles Beans stated that with the installation of modern wells and pumps the Kamia have developed a desire for clear well water for drinking.

Mosquitoes were said not to have been very troublesome.

In winter the household fire was built indoors, in summer outdoors. The house had no chimney or smoke hole, the only exit for smoke being the doorway. The center of the house was the usual location for the fire. Rotten mesquite or screw-bean wood was used as fuel. Willow was regarded as unsatisfactory, because it burned too quickly. A common feature of a Kamia fire is a length of trunk with one end only smoldering, thus economizing fuel. When cooking is to be done this smoldering end serves as a nucleus for a fire over which the pots are placed. After the cooking is completed the fire is allowed to die except for the smoldering end. Sometimes water is applied to this to extinguish or nearly extinguish it.

The side of the fire toward the entrance of the house was regarded as the best sleeping place. It was occupied by the head of the house and his wife. Both husband and wife were regarded as house owners, but the husband especially. The rest of the family slept on other sides of the fire. Each bed was simply a willow-bark blanket spread on the floor. The bed covering, when such was necessary, was either a willow-bark blanket or a rabbit-skin blanket.

Within a house were kept blankets, mortar, pestle, metate, and muller. Pots were kept outside.

If any inmate of a house died, whether adult or child, the house and furnishings were burned and the family moved. Mortar, pestle, blankets, and other things were left to the flames.

In front of the house, but anciently not in juxtaposition, was built the shade (wisál). It was square and in summer comprised only an arrowweed roof supported on poles. In winter arrowweed sides were added. There cooking was sometimes done.

Above was mentioned the fact that aged persons were put in small shelters (also called uwá) close to the family dwelling (uwá). I saw such a shelter at Charles Beans's place. It lacked, however, the sand covering of former days. It was occupied by the aged and crippled informant Jose, who spent most of his time lying in the dust

of the earthen floor, as he was unable to walk. The structure was about 12 by 12 feet in ground plan, open to the south, but with the other three sides closed by willow poles covered with arrowweed. The back (north side) was vertical, but the east and west sides sloped somewhat. Three posts in front and three in back were capped by stringers, running east and west. The stringers supported six rafters running north and south. On these was a covering of willow branches, arrowweed, and mud.

SWEATHOUSE

Charles Beans asserted that the Kamia had the sweathouse (wasopet), Narpai that they had not. Narpai knew of the sweathouse among the Diegueño, but had never been in one. He was positive that there were no sweathouses at the Kamia settlements of Xachupai, Saxnuwai, and Xatopet. I think that Beans's account must refer to Diegueño sweathouses.

Narpai had the following to say about the Diegueño sweathouse. One person owned it, but allowed its free use by others. A very hot fire was built inside and the sweater rubbed his body with his hands. He remained within until very hot, then came out and bathed. Men sweated when they felt sore or weak or sick. Women never sweated.

Beans described the alleged Kamia sweathouse as follows: It was conical, built of willow poles with center post, arrowweed and earth. It was about 6 feet high, 4 feet above ground, 2 below, for the floor was excavated to that depth. The doorway was on the east side and was closed with arrowweed. The fire was built in a depression near the center of the floor. The structure was large enough for four men to sweat at a time. Rarely, a sick woman was allowed to use it. Its prime use was curative, especially the treatment of rheumatic pains. However, there was no sweating for colds. Sweating was followed by washing in cold water or a plunge in a slough or the river. The sweathouse was built by the chief, or at his behest, for a sick man. Perhaps after two or three sweatings the man would be well. The sweathouse was not demolished after a cure, but was left standing for later use.

AGRICULTURE

The agriculture of the Kamia was like that of the Mohave, Yuma, and Cocopa. It depended upon the inundation of the land at the time of the high water of the Colorado River in May and June.

The Kamia grew maize (*Zea mays*), cowpeas (*Vigna sinensis*), teparies (*Phaseolus acutifolius* var. *latifolius*), watermelons (*Citrullus vulgaris*), pumpkins (*Cucurbita pepo*), and gourds (*Cucumis*).

Probably the several varieties were like those of the Yuma and Cocopa. From one informant were obtained samples of the seed of the blackeyed cowpea, the tepary bean, and the soft or flour corn (maize). The native terms applied to these were, respectively, axmax, marik, and iyats. An equal antiquity was claimed for the cowpea as for the bean and the maize, although it is a plant of Oriental origin.

The Kamia, like the Yuma and Cocopa, never irrigated growing plants. Their only interest in irrigation pertained to the soaking of the soil with the inundation waters. This process was sometimes accelerated by damming a small slough. The place Xatopet takes its name from this practice.

In planting seeds in the moist earth the Kamia used a planter, which was a stick 1½ inches in diameter and 3 or 4 feet long. This was shoved into the ground with the hands to a depth of 6 inches. No preliminary spading of the mud was necessary. The drilling of the holes for seeds was done by the men. Often behind the man followed a woman with a pot of seeds. In each hole she dropped five seeds. Then she crumbled fine earth into the hole with her fingers. This was not rammed in, for it was believed that the plants would not grow if it were pressed down.

Although there was no watering of growing plants, there was a certain amount of care bestowed upon them. Weeding was done with a swordlike flattened piece of mesquite wood.[32] Both men and women heaped earth around the growing maize plants with their hands. This prevented the wind from blowing the plants over. No trellises were constructed for beans, pumpkins, or melons. The vines were allowed to run along the ground.

At Jacumba, in the mountains of Eastern Diegueño territory, the several lineages planted watermelons, pumpkins, maize, teparies, and cowpeas. The conditions of cultivation were different from those in Imperial Valley, there being no inundation by river waters, but the conducting of water in ditches from a spring, which filled at night, to the gardens. The flow was regulated by a dam. This was on the Mexican side of the international boundary. Jose, the informant, insisted that no Mexicans were there at the times he visited; but it seems that this type of planting must have been due to Caucasian influence, perhaps from the Missions. In addition to five Kamia lineages from Imperial Valley (nixkai, kwatL, lyacharp, hiLmiarp, and tumau) planting at Jacumba, there was one Eastern Diegueño lineage (kwitaRk) which also planted, although never going to Imperial Valley to do so. The Indians also gathered "wild

[32] Cf. Kroeber, Handbook, pl. 67.

wheat" on the Mexican side of the line. Finally the Mexicans drove them across the line into California.

This apparent temporary use of the Eastern Diegueño territory for agricultural purposes illustrates the close affiliation of the Kamia and Eastern Diegueño and makes increasingly difficult the drawing of a boundary line between them.

The Eastern Diegueño lineage oswai which lived north of Jacumba did not plant, either in its habitat or in Imperial Valley.

WILD PLANT FOODS

Supplementing the cultivated plant foods of the Kamia was a series of wild plants. Presumably the sorts listed below do not exhaust their dietary. Nothing could be learned of the planting of the seeds of wild plants to insure a greater yield.

The most important wild food was the pod of the mesquite tree, *Prosopis juliflora*, called anaxi. A close second in importance was the spirally coiled pod of the screw bean tree, *Prosopis pubescens*, called iyix. These were collected from the ground in July. The trees are very branchy and thorny, so that climbing is impracticable; moreover, they do not grow to a great height. However, the trees were shaken and hooked sticks used to bend the branches.

Espayau was a favorite place for collecting mesquite pods. No planting was done there, for the land was too high.

Acorns were obtained from the Diegueño in exchange for cultivated plant foods, watermelons being a favorite. The Diegueño seem most frequently to have brought the acorns to the Kamia, rather than the Kamia taking the watermelons and other cultivated foods to the Diegueño.

Acorns were pulverized in the cottonwood mortar, used also for mesquite pods, with a long stone pestle. The bedrock mortar was not used. Leaching of the meal was done in a sand basin covered with a layer of arrowweed foliage, or nowadays, at times, a burlap sack.

The Kamia settlement of Xachupai was the most favorably situated for obtaining acorns. Its inhabitants sometimes went into the mountains for them, also for mescal, Narpai said. Probably such trips were made in conjunction with Diegueño friends.

Baked mescal root, an important food in the hilly parts of southern California, was not prepared by the Kamia. The Diegueño, however, cooked the plant in the earth oven. It was traded to the Kamia in the form of dried fibrous cakes.

Tule pollen and tule roots were eaten. A favorite gathering place was Seven Wells, Lower California, where the plant grew abundantly along the slough.

Another swamp plant that furnished food was called wāRó. The seed capsules were pulled off by hand over a pot, which in this instance served the purpose of the seed gathering burden basket of central California. The capsules were rubbed with the hands to free the seeds, then winnowed in a pottery dish three times. After thus being freed of chaff they were crushed on the metate. The meal was eaten dry without cooking. A little water was taken with each mouthful.

The range of sandhills, stretching northwest and southeast on the eastern side of Imperial Valley, yielded some plant foods to the Kamia. The black stems of a foot-high plant, called yidut, were boiled in pots. Peeling left the sweet white meat of the stems ready to eat. Another plant called nyus had a ball-like root as big as a large onion. This was boiled and eaten.

For greens the leaves of a sow thistle (*Sonchus oleraceus*), called yaumisyul, were boiled.

Of the wild seeds that were eaten some kinds were pulverized in the cottonwood mortar, others on the stone metate. The seeds of yerba mansa (*Anemopsis californica*), called ᵉskis, were pulverized in the mortar. The meal was then cooked as mush in a pot or baked as bread in hot ashes.

The fine seeds of a grass (*Cyperus erythrorrhizos*), called walau, were collected in a pot. They were pulverized in the cottonwood mortar with a wooden pestle. The meal was cooked as mush.

An abundant shrub is *Atriplex torreyi*,[33] called apai. Its numerous seed capsules were collected in a pot, pounded in a wooden mortar with stone pestle, and winnowed with the aid of the wind. The brown seeds were then pulverized on a metate. Soaking in water preceded cooking, and increased the bulk materially. Cooking was done in a hole in which a fire had been built. The meal was left overnight in this heated pit. The heat was conserved with a covering of arrowweed and moist earth. In case of storage the seeds were not pulverized until actually needed for consumption.

SALT

Salt was obtained at three places: At the southern edge of Salton Sink, at a salt deposit in a place called Wienyai, in Lower California, and at a place 2 or 3 miles southwest of Algodones. At this last place salty earth was obtained. This was washed twice or thrice and the water boiled away until salt crystals were left.

[33] I am indebted to Miss Alice Eastwood, of the California Academy of Sciences, for the identification of plant specimens.

Wienyai was a depression south of Indian Wells (Xachupai) and north of Black Butte (Wiespa). It was visited by both Kamia and Cocopa. There was a mud volcano close to it. The salt deposit has now disappeared on account of the shifting of the Colorado River channel.

TOBACCO

Tobacco (op kamiyahi) was not grown by the Kamia but was obtained from the Diegueño. No pottery, stone, or carved wooden tubular pipe was used. A 4-inch length of cane served as an intermediate between the tubular pipe and the cigarette.

Tobacco was not eaten or chewed.

The Kamia were culturally like the Yuma and Cocopa in importing their tobacco from the mountaineers to the west of them.

FISHING

Fish were taken with the hand, the hook, the basketry scoop, the seine net, and the bow and arrow. No dip net was used, the scoop taking its place. Fishing platforms and poisons were unknown. Fish were not dried for future use, but were consumed at once. No ceremonies were held in connection with the first catch of the season. No shellfish were eaten, probably none being available.

The fish scoop (watsuts) of the Kamia was a handled affair, somewhat resembling that of the Mohave.[34] It was made of willow stems. The Kamia attribute the invention of the fish scoop to Pelican. The god Mastamho told Pelican that when he was transformed from human to bird form he was to use his bill to catch fish.

In the manufacture of the fish scoop the willow twigs to form the walls were laid side by side to form a rectangular mat. A stick was bound across their middle and two others across their ends. Then the mat was bent to form a half cylinder with the three transverse ribs on the outside. It was held in this position by binding the transverse handle in place in the middle and two transverse pieces at the ends. The ends of the scoop were then closed by tying on horizontal cross sticks of willow. The form was thus slightly different from the Mohave scoop pictured by Kroeber, which is really boat-shaped. The Kamia scoops were usually 4 or 5 feet long and 1 foot 6 inches in diameter.

The scoop was used in lakes and occasionally in sloughs, but never in the Colorado River. Several men, each equipped with a scoop, fished together.

[34] Kroeber, Handbook, pl. 59.

Hooks, ready made, were obtained by using the curved spines of the barrel cactus. Several such hooks were attached to fish lines of cowpea fiber string and baited with grasshoppers (tumau).

The seine net was about 50 feet long and was used by six men, who waded with it. The top and bottom edges of the net were held apart with about 25 arrowweed sticks. The men held the bottom edge of the net down, as no net sinkers were used. Such nets were used in lakes, large sloughs, and the Colorado River. Four sorts of fish were caught in the seine. The English and native names given by the informants are as follows: "salmon" (powili), "humpback" (koyashi), small white fish (shikushi), and catfish (küus). Dr. Barton W. Evermann has supplied the following notes:

"Salmon," *Ptychocheilus lucius*. Also called "white salmon." Not a salmon at all, but a Cyprinid or minnow.

"Humpback," *Xyrauchen cypho*. A sucker.

Small white fish, *Gila elegans*. A minnow.

Catfish, *Ameiurus nebulosus*. Introduced from the East.

Only one species of fish—the humpback—seems to have been regularly taken with the bow and arrow. It was killed in the sloughs at the time of high water. The arrows lacked stone points. The bow used was said to have been of either mesquite or screwbean wood.

To carry fish, they were strung through the gills on willow withes, about 20 fish to a withe. Each withe was then tied in a ring, and two withes put on the ends of a 5-foot pole. This was carried on one shoulder, fore and aft, and steadied with one hand.

HUNTING

The Kamia shared with the Colorado River tribes only a feeble development of hunting technique and devices. Neither snares, nets, nor decoys were used. Even the stuffed deer head decoy was lacking.

Ducks, geese, and quail were taken with bow and arrow only. Squirrels and gophers were sometimes shot, but were not eaten.

The jack rabbit (minyau) and the cottontail rabbit (kasau) were killed and eaten. The latter were decoyed by a squealing sound made with the fingers over the lips, and shot with the bow and arrow. Jack rabbits were killed with the boomerang.

At least 10 men participated in the jack rabbit hunt. The brush along the river or slough, several miles from the settlement, was fired and the scurrying rabbits bowled over with the boomerang, of which each man carried but one. The time of the rabbit hunt was summer. There was no special rabbit-hunt director other than the chief. He announced to the men the time of the hunt and admon-

ished them to arise early, eat only mush, and be ready to start promptly. There was no pooling of the kill. Each hunter kept what he killed. However, an unsuccessful hunter usually had his lack of success compensated by the bounty of his fellows. Such gifts were not mandatory, but were dictated solely by good-fellowship.

Rabbits were usually skinned, gutted, and cooked by covering with hot ashes and coals. Sometimes they were boiled. The bones were normally thrown away, no artifacts being made from them. For a very old person, rabbit meat together with bones might be pulverized in the cottonwood mortar. The rabbit bones were not cracked for marrow.

Deer (akwak) were hunted with the bow and arrow in the willows along the Colorado River. No call was employed to entice the deer.

Before hunting deer or mountain sheep a man must not sleep with his wife for two nights. A hunter who brought in deer usually gave some of the meat to the inmates of the two or three neighboring houses, regardless of their lineage.

Sometimes dreams portended success in hunting. Jimsonweed was not taken for such purpose, however. Dogs might eat deer meat without spoiling a hunter's luck.

If a hunter wounded a deer, which escaped but was killed by another hunter, the two divided it equally. There were no ownership marks on arrows, however, by which the first hunter's might be identified. Sometimes the arrows of different hunters were alike, sometimes different.

Beavers (pily) were dug out of their houses and killed with the digging stick of screw bean or mesquite wood.

Mountain sheep were formerly hunted in the mountains west of Calexico.

COOKING AND EATING

Fish might be broiled on the fire, but seem to have been more commonly stewed in a pot; bones, guts, and scales all being included. It was said that fish of different species were usually stewed separately. Cooking fish were stirred with one or two willow sticks; if two, they were tied together. These contrast with the Mohave three sticks and the Cocopa five sticks. When acorn mush was made of meal imported from the Diegueño it was stirred with a willow paddle like that illustrated by Kroeber.[35]

The widespread practice of parching seeds with hot coals seems to have been absent. At least, informants knew nothing about it.

[35] Handbook, fig. 38 (lower).

The placing of seeds in a heated pit seems to be the nearest approach, also an approach to the earth oven. There were no heated stones in the pit, however, as in the earth oven.

Fingers took the place of spoons. Acorn mush was eaten with the index and middle fingers. Fish stew was eaten with the same two fingers. Mesquite decoction was drunk from the whole hand. It was drunk sweet, never fermented.

Formerly the Kamia ate only one meal a day, Charles Beans said. "Now they eat all the time," which of course, is an exaggeration.

BOOMERANG

The boomerang or curved throwing stick is called kapu. It was made of the hard wood of the screw-bean tree and was used especially in killing jack rabbits. Each man carried but one. In throwing it was held obliquely, that is, not horizontally or vertically, but at an angle of about 45 degrees above the horizontal.

BOWS AND ARROWS

The bow was of the simple type, usually made of mesquite, screw-bean wood, or willow, and equipped with a deer-sinew string. The arrow was either of cane with foreshaft or of arrowweed. The arrow release was primary. A deer rawhide wrist guard (secheaв) was worn on the left arm to protect it from the bowstring. The informant said it was ancient and not a Caucasian innovation, a statement probably to be doubted. It was laced on with sinew string through perforations in the opposing edges.

The bow of willow was made of green wood, which was tied in position and sun dried for five days. I did not learn exactly how the bowstring was attached, but the informant said that it was tied differently from the Diegueño method illustrated by Spier.[36]

War arrows were of two types, a straight arrowweed shaft and a cane arrow with an arrowweed foreshaft. Both had stone points attached with sinew. According to Charles Beans, the point was made of stone derived from the mountains and was shaped entirely by percussion with another stone, no bone flaker being used. Three or two half feathers from a large hawk were lashed with deer sinew to the base of both types of arrow. Red and black encircling bands were painted on the feathered portion of the shaft. A gum which forms as an excrescence on the roots of certain old arrowweed plants was used to glue the feathers in place. This gum was not used in

[36] Southern Diegueño Customs, p. 351.

attaching the foreshaft of the cane arrow. The foreshaft was merely shoved into the cane shaft without glue or sinew binding.

Arrows for killing small birds were made of arrowweed. Four small sticks in pairs placed at right angles were tied transversely across the distal end of the arrow.

QUIVER

Arrows were sometimes carried in the bow hand, as shown in Kroeber's Handbook,[37] stuck in the belt or girdle at the back, or carried in a quiver. The quiver (kopit) was usually of wildcat skin, hair out, tail down. It was fastened to the belt at the left side and was used both in hunting and fighting. The skin was dried a little, then softened with deer brains, which were sometimes kept dried, or with pumpkin seeds. The hot season was the best time to cure a skin, as the hair came out least at that time.

Deerskin quivers were sometimes made. The skin was stretched in the sunshine by being staked to the ground. Then it was scraped with a small stone knife, which had been chipped to an edge with another stone. Men did the skin dressing of both deer and wildcat skins for quivers.

ARROW STRAIGHTENER

No wooden arrow straightener was used. The steatite arrow straightener was of the shape and size of the Mohave pottery one.[38] It was heated and the cane arrow bent over it. It was said never to be used for an arrowweed arrow. The steatite was obtained in the Jacumba region.

The informant contrasted the Mohave-Kamia type[38] of arrow straightener with the Diegueño type, which he said was a grooved block of steatite.

STONE KNIVES

No stone axes were made or used. Stone knives and arrow points were made from both black stone and yellow stone, obtained in the mountains. These were said to be flaked entirely by percussion, another stone being used as a hammer. There was no pressure flaking and no use of antler for flaking. The knives were said to have had one end shaped as a handle, but to have lacked any wooden-hafted handle or string-wrapped handle.

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[37] Pl. 18.

[38] Kroeber, Handbook, pl. 49 f.

WAR CLUB

The war club (kilakwai) was of heavy hardwood, mesquite or screw bean. It was of the potato-masher shape common to the lower Colorado River tribes. The handle was perforated for suspension from the waist by a cord.

STABBING PIKE AND "FLAG"

The Kamia employed no dagger, but did use a stabbing pike (akwil), pointed at both ends. This was used especially for abdominal thrusts at close quarters. It was made of very heavy arrowweed or of willow. For actual fighting the arrowweed was the more effective. This weapon was decorated with feathers and served as a standard or flag as well as a weapon.

An akwil was always adorned with feathers, either all white or all black. The former were from the white pelican, the latter from the crow. The feathers were attached along one side and hung downward when the akwil was held horizontally. Each feather had a willow bark string lashed to its base by means of a wrapping of finer string. (See model, pl. 2, *A*, *a*.) Each feather was attached individually to the akwil.

In use, it was a flag as well as a weapon. The akwil with black feathers was carried by a warrior who was painted black. The white akwil carrier was painted white. Only two warriors, very brave and fleet of foot, carried these standards. Others carried bows and arrows or clubs. When battle was imminent the bearers of akwil ran ahead of the body of troops and rushed against the enemy.

The use of the akwil as a standard or flag borne before warriors in battle suggests the flags of the ancient Mexican troops and also the feathered lances of the Plains Indians.[40]

Two akwil are used by the Yuma [41] in their keruk (mourning) ceremony, and by the Kamia in modern imitations of the Yuma ceremony. Formerly the Kamia did not employ the akwil in mourning ceremonies. The feathered sticks mentioned by Kroeber for the Mohave [42] were probably the same type of object.

SHIELD

The Kamia shield was of deer hide and about 15 inches in diameter. The edge was apparently folded and sewed to make the shield firm.

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[40] Wissler, North American Indians of the Plains, fig. 2.
[41] C. D. Forde, ms.
[42] Handbook, p. 750.

The surface was painted a uniform black. Charles Beans thought the grip was at one edge instead of in the middle.

No armor was used.

WARFARE

There were three kinds of warriors: (1) armed with bow and arrows, (2) armed with club and shield, (3) armed with stabbing pike.

The Kamia probably engaged in no extensive campaigns, except as allies of the Yuma and Mohave. Their limited numbers made a war of their own against the Cocopa a dangerous proceeding.

Spier writes of a conflict between the Diegueño and the Yuma.[43] Charles Beans, Jose, and Narpai knew nothing of this and thought that it must have been a fight between the Diegueño and the Cocopa, for the latter on more than one occasion fought both the Diegueño and the Kamia. When Narpai was a very small boy the Cocopa killed some Kamia. When Narpai was somewhat older, but still a boy, there was a threat of war between the Cocopa and the allied Yuma and Kamia. First the Cocopa killed Kamia. Then the Kamia killed Cocopa. The Yuma were helping the Kamia. The fighting was along the Colorado River. Narpai was at Xatopet when the Cocopa attacked the Kamia. He had to run away.

The last threat of war came a little later, in the time of the Yuma chief Pasqual. A Yuma, who worked on a steamer running down to the mouth of the Colorado River, was killed by the Cocopa in the south. This led to a war rumor and the Kamia took to the bush. Pasqual then went to the Cocopa chief and requested permission to kill a Cocopa to even the score. This was refused. Pasqual then went to the commander of the American troops at Fort Yuma, but the latter refused to allow a war. Pasqual, therefore, halted all preparations and there has not been a war with the Cocopa since. No Kamia were killed on this occasion.

WOODWORKING

Woodworking was at a minimum. No stools or pillows of wood were made. Woodworking tools, such as the maul, wedge, and adze, were lacking. Fire and sharp-edged or sharp-pointed stones were the means of working wood. House posts, clubs, mortars, some pestles, digging sticks, shovels, mush paddles, boomerangs, bows, and arrows were the principal artifacts of wood. There were no solid wooden containers other than wooden mortars. Carved boxes were totally lacking.

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[43] Southern Diegueño Customs, p. 299.

FIBERS AND CORDAGE

Mesquite inner bark and the cowpea vine were the sources of the strongest fibers. Willow inner bark fiber was less satisfactory, but was used extensively for string, head rings, breechclouts, shinney balls, cradle bedding, dresses, and blankets.

Willow inner bark was in best condition and most readily obtainable in the hot season. A fire was built around the base of the tree to aid in loosening it. Then it was stripped off with the bare hands, from the bottom upward. No tool was employed. The bark was not beaten to soften the fibers.

In preparing both willow inner bark fiber and mesquite inner bark fiber for string, the material was first immersed for a month in a pool, being placed between two layers of arrowweed and weighted down with a log. Spinning was done on the bare thigh.

Willow bark, either loose or lashed into a thick ring, served as a cushion and stabilizer in carrying pots and cradles on top of the head.

CLOTHING

Blankets and breechclouts were woven, the former by middle-aged or elderly women, the latter by men.

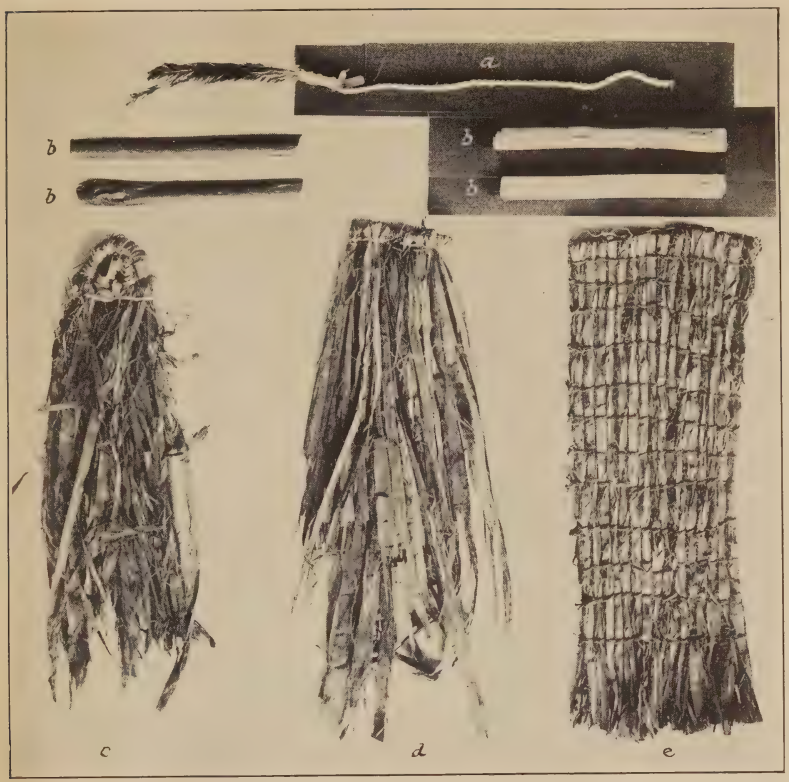
Willow inner bark string for blanket manufacture was wound on a stick diagonally back and forth like a modern kite string. The warp element or the weft element for a blanket thus consisted of a single long unbroken string.

Two types of willow-bark blankets were made. In one both warp and woof were of 2-ply cord. In the other the warp was composed of bundles of willow bark fiber and the woof of 2-ply cord.

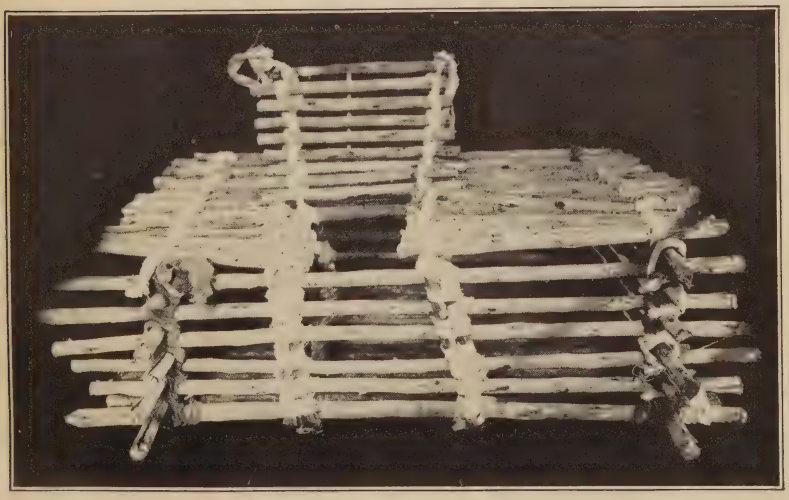
The following is an account of the manufacture of a small model of the second type by the informant Rosa Narpai. (See pl. 2, *A*, *e*.)

Rosa moistened the inner willow bark to make it more pliable. Then she worked it between her fingers and cut off hard parts with a knife. She split the bark with her fingers, smoothed it out, and laid the strips parallel. Then she bent these into little U-shaped bundles, which she tied in the middle and laid on a canvas upon which she sat. As she worked she sat with her right leg folded at her side and her right foot behind her. Her left foot was in the position it would have been in if she were sitting cross-legged. After making the U-shaped bundles she pressed each flat.

Then Rosa made the blanket by placing the flattened bundles side by side, tying each one to its neighbor with a simple knot. In tying she sometimes used her teeth to hold one end of the string, the other end in her right hand, the left hand holding the material in position.



A. *a*, 1–27080, feather and attached cord as used for attachment to stabbing pike or flag; *b*, 1–27081, four willow stick dice, about 6¾ inches long; *c*, 1–27076, willow bark bed for cradle; *d*, 1–27077, willow bark skirt; *e*, 1–27078, miniature willow bark blanket



B. Mockingbird cage, 1–27083. Width about 19 inches

The specimens shown in this plate are models made in 1929. All are in the University of California Museum of Anthropology.

Later Rosa sat cross-legged as she put in a second course of weft string, which she merely twined without tying. Anciently willow-bark string was used for tying material.

Willow-bark blankets made entirely of string were about 5 by 6 feet in dimensions. Four sticks were driven in the ground for the four corners. Around the tops of these four sticks a heavy cord was wound. This was to become the edges of the blanket. This was about 3 feet above the ground, so that the weaver might get beneath it to work. The warp strings ran in one continuous string from end to end, passing repeatedly around the two heavy end cords. The weft was a single continuous string, which for convenience in handling was wound on a stick as described above. The weave was a simple checker, the weft element passing under warp 1, over warp 2, under warp 3, and so on.

Breechclouts were similarly woven on a frame.

The warmest of all Kamia garments was the rabbit-skin blanket, made of twisted, interwoven strips of fur. The rabbits were killed by the men with boomerangs, but the work of preparing the skin strips and the weaving were done by the women.

The narrow strips, into which the rabbit skins were cut, were twisted, while green, around mesquite bark fiber string. The twist was to the left. The strings on which the strips were twisted were stretched taut. Then the rabbit skin was allowed to dry in place. Narpai denied that the ends of the strips of rabbit skin were tied together; Charles Beans affirmed that they were, not with a square knot, but by laying the pieces side by side and tying a simple knot in the ends of two pieces in juxtaposition.

In weaving the blanket, four vertical stakes driven in the ground served to hold the rabbit-skin rope, which was stretched horizontally around their tops to form the four sides of the blanket. Then the warp elements of rabbit-skin rope were wound back and forth from end to end of the frame.

The weft was of plain cordage without twisted rabbit skin on it. Both Narpai and Charles Beans agreed that the weave was not twining, but was a plain cloth weave, each weft element passing under one warp, over the next, under the next, and so on. In the next course of weft the order was reversed, the weft passing over those warps which the last weft had passed under. Thus every warp alternately was covered above and below by weft.

The Kamia wore no buckskin garments, but used instead garments made of inner willow bark fiber, as for instance the breechclout. Girdles were of hair or plant fibers, never of leather. The Kamia make no glass beadwork, as do the Mohave to-day.

No cloth blanket, other than those of willow bark and rabbit skin, was worn.

The Kamia woman's attire consisted of a two-piece dress of willow bark—a front skirt and a back skirt—held in place with a belt of the woman's own hair. No breechclout was worn under the dress. Little girls wore the same type of two-piece dress as women. (Pl. 2, *A*, *d*.)

The willow bark was laid out in little bundles, after combing with the fingers and removing any hard portions. These were then tied at the middle, folded at the middle, laid side by side, and tied with 2-ply willow bark cord until the garment was of requisite breadth. In tying, the teeth were used to hold one end of the cord, the right hand the other, and the left hand to steady and hold the bundle in position. Sometimes such a dress or apron was formed of a collection of 3-strand braids of willow bark instead of the loose bark fiber just described.

In cold weather a woman might wear a cape of twisted rabbit skin, tied at the neck by cords. Occasionally women wore basket caps imported from the Diegueño.

The principal garment of the Kamia men was a breechclout woven of willow-bark string. It passed under a belt or girdle of willow-bark string in front and back. In front the end of the breechclout hung nearly to the knees; in back below the knees. In running, men passed the long hind end forward between the legs and tucked it under the girdle in front. The width of the breechclout was 6 inches.

The girdle or belt was usually of 3-ply or 4-ply willow bark cord. In modern times black threads from American cloth were sometimes used. Warriors' girdles were made of women's hair, and in later times of horsehair. Girdles were also made of mesquite-bark fiber. This was soaked four days in water containing black mesquite-bark gum, in order to dye it black.

Rosa Narpai made me a simple 3-strand braid of horsehair to illustrate the method of braiding a hair girdle. After braiding a bit she fastened the finished end to the great toe of her left foot. As she proceeded she wound the finished part around the left foot, so as to keep the part she was working on taut and at the right working distance from her body. She sat on the ground with her legs straight in front of her, except that they were crossed at the ankles, the left on top of the right.

Small boys often went naked. If they wore garments, these were of the same type as the men's.

FACE PAINTS

Both men and women painted their faces. The faces of children and babies were also painted. The pigments used were red and black

minerals. The latter, according to Prof. G. D. Louderback, is an impure manganese dioxide, probably psilomelane. Both were obtained in the Jacumba region in Diegueño territory. The red pigment was called kwail, the black wagish. The pulverized pigment was kept in a small painted deerskin pouch, hair side out. A drawstring, preferably of buckskin, ran through holes near the top of the bag.

Although the source of the pigment was in Diegueño territory, the Kamia were always welcome to help themselves. The Yuma and Cocopa obtained their pigments from other sources, to the north and to the south, respectively.

Red and black might be used in conjunction in the decoration of one's face, or a given design might be in either red or black. War paint only was always black, the face, body, legs, and arms being completely covered. Warriors helped one another to apply the paint. Sometimes men painted their bodies and legs red.

Much face painting was purely decorative and might be applied at any time, whenever one felt like it, Charles Beans said.

A pattern for men, in either red or black, was as follows: Under each eye three horizontal bars; at each corner of the mouth a downward pointing triangle, with base in line with the mouth opening. No name was obtained for this style.

The face paint B illustrated by Spier[44] was an old Kamia pattern which was done in black.

The informant Charles Beans said that some of the Mohave face paints illustrated by Kroeber[45] were also Kamia patterns. However, he could not designate the particular patterns.

TATTOOING

Certain tattoo patterns shown by Kroeber[46] were used by Kamia women only. Tattooing was a sort of puberty rite for girls, the operation taking place after the first menses and between the ages of 13 and 15 years. An old man did the tattooing; more recently a woman sometimes did it. The tattooed girl fasted from meat and fish for four days and drank only mesquite decoction. However, there was no punishment for breach of taboo. Sometimes three or four girls were tattooed at a time, being brought to the tattooer's house for the purpose. The tattooer gave a feast to the relatives and friends who assembled. After the operation the girls were put to bed in their respective homes. There they remained for four days. There was no singing over a girl thus confined, and no special season for tattooing.

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[44] Op. cit., p. 341.
[45] Handbook, figs. 60–62.
[46] Handbook, pp. 520–521, figs. b, f, r, u.

Tattooing was chiefly on the girl's face, though sometimes vertical lines were tattooed on the chest. The pigment was rubbed on first; then the skin pricked with a splinter of deer leg bone. The pattern was completed in one operation. The pigment was mesquite charcoal.

Rosa Narpai had a tattoo pattern on her chin, consisting of a vertical line on each side, with three horizontal rows of five dots each between them.

Occasionally a man was tattooed, usually on the forehead, a place where women were not tattooed. Nor was the men's tattooing a puberty rite in any sense. Charles Beans was tattooed when he was already married and about 25 years old. An old Kamia man tattooed a bow and arrow on his forehead, just above the eyebrows, using a steel needle. The arrow was represented by a horizontal line. The bow placed above the arrow was in a horizontal position with the bow string parallel and adjacent to the arrow. The bow was represented with a dip in the middle like a Cupid's bow.

HAIR

Beards were not the fashion for Kamia men. The individual hairs were extracted with the finger nails. Hair from no other part of the body was removed. The removal of the whiskers was often done piecemeal. I noted one of my informants with one side of his face plucked and the other side bristling with beard stubble.

Men as well as women wore their hair banged over the forehead. Children's hair was allowed to grow long all around.

The hair was frequently washed in a boiled decoction of black gum from the bark of the mesquite tree. This enhanced its natural blackness and was believed to stimulate growth. Also mud was boiled in this decoction and plastered on the hair, for the same purpose and to kill lice. Mud alone was also used for the latter purpose. It was applied for two or three consecutive nights and washed out each morning. However, I have seen individuals, both young and old, wearing the mud coating during the day.

The fingers normally served as both brushes and combs. The hair was also parted with the fingers. I noted an old woman parting hers in back as well as in front.

The hair of the men was worn in long pencil-like rolls reaching to the waist. The hair was not gummed to form the rolls, but was merely rolled between the hands. In tying the rolls of hair on top of the head, one roll served as a tie at the back of the neck to bind all the others together. Before the introduction of cloth the hair was bound on top of the head by tying it around with a willow-

bark cord. To-day the normal way of fastening the hair rolls on top of the head is by the use of a large handkerchief, usually brilliant in color. After tying the rolls together at the nape they are then folded compactly on top of the head and bound in place with a handkerchief. This is done very cleverly. One corner of the handkerchief is held between the teeth while the handkerchief is thrown back over the face and hair. The two side corners are brought around on the forehead and partly tied so as to bring the handkerchief close against the back of the neck. By pulling down the front corner (held by the teeth) it is tightened so that it fits snugly against the back of the neck. The last operation is to tie the front corner in with the two side corners on the forehead. The fourth corner at the back of the neck enters into no knot.

The hair net was not employed and no feather head bands were worn.

Both men and women in mourning cut their hair with a stone knife. The men removed but a few inches from their long rolls. Sometimes, too, without this motive, they cut these if they became too long. The women bobbed theirs to just above their shoulders. Normally it came a little below the shoulders. The informant Charles Beans had never heard of singeing off the hair.

MUTILATIONS

All babies had their ears pierced at the age of one or two months. A deer-bone awl or needle was used.

Only males had the nasal septum pierced. This was normally done at the age of 14 or 15 years, and by old men. An arrowweed stick or a shell ornament was worn in the opening. Bone ornaments were not worn.

There was no scarification in sickness or at other times. Circumcision was not practiced.

BEADS AND PENDANTS

Owing to the distance to the Gulf of California and the intervening hostile tribes, the Kamia did not collect clamshells themselves. At times they obtained them from the Cocopa, but not from the Pima or Papago.

Women only wore necklaces of "blue" beads, made from the purple portion of the clamshell. One gulf species utilized was *Chione fluctifraga*, called by the Kamia anyan.

Three sorts of shell ornaments were worn by men in, or suspended from, the perforated nasal septum.

The shell nose stick was a long, slender cylinder of shell with a longitudinal perforation. This was worn in the septum and projected equally on either side of the nose.[47]

A rectangular clamshell pendant was hung from the nose by means of a string passing through a perforation in the shell and through the perforation in the septum.

Strings of small white clamshell disk beads were worn suspended from the hole in the septum, sometimes dangling below the lower lip. Often two or three strings of beads were worn in this fashion. When one ate they had to be held up out of the way.

SANDALS

The Diegueño made yucca-fiber sandals like those pictured.[48] These were among the things traded to the Kamia for agricultural products. Yucca was said not to grow in Kamia territory. Kamia informants had recollection of horsehide sandals only as being made by the Kamia. These were said to be called kwatL, which, however, is merely the word for a piece of hide of any kind.

The hide sandal had hide straps, which ran through two holes in the front of the sole and were secured by knots on the under side of the sole. At the sides were two tabs as pictured by Spier for the Eastern (Southern) Diegueño.[49] The tying of the Kamia sandal was also similar to the Diegueño.

The manufacture of the horsehide sandals was done entirely by men, even those worn by the women.

Sandals of either type were worn especially by old men and old women when traveling. Small girls sometimes wore sandals in summer, because the ground was so hot as to make them cry if they went barefoot.

Moccasins were never worn.

POSTURES

A favorite sitting posture of women was resting on the buttocks with knees drawn up, sometimes the arms around them. Sometimes only one knee would be drawn up and the corresponding arm rest upon it. The other knee would be allowed to lie sidewise, almost touching the ground.

Elderly people carried a staff.

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[47] Cf. Kroeber, Handbook, pl. 65.
[48] Ibid., pl. 62; Spier, op. cit., p. 345.
[49] Ibid., fig. 5.

BASKETS

Like the Yuma and Cocopa, the Kamia made no finely woven coiled baskets. The only basket of this type seen in a Kamia household was a Diegueño plaque from Campo, San Diego County, used by the Kamia owner for winnowing and sifting acorn meal. All winnowing baskets used in preparing seeds, acorns, mesquite pods, and screw-bean pods were obtained from the Diegueño.

The cradle, fish scoop, and storage granary were virtually the only baskets made by the Kamia. The fish scoop is described under Fishing.

Cradle

The Kamia cradle (yaga) was like the Mohave cradle.[50] The wicker ring (abit) was attached near the top, as a sunshade and to keep the cradle covering of willow bark off the face of the infant. The willow-bark covering was woven from bark fiber which had been softened by soaking in water for a month.

The cradle was not carried suspended on the back, but was either balanced flat on top of the head in Cocopa style or against the hip. When carried in the latter style one of the long sides rested against the hip, not an end. No pack strap was used with the cradle.

Each child had two cradles, a small one, used in early infancy, and a larger one. Cradles were made by women.

The bed of the cradle was made of a pad of shredded willow bark and the baby was wrapped in the same material. (Pl. 2, *A*, *c*.)

The sides and top of the cradle were formed of a U-shaped half loop of peeled mesquite root. The crosspieces of the cradle were of the same material, attached so as to form a sort of ladder. The crosspieces fitted transversely between the two sides of the cradle and were lashed into place with split pieces of small mesquite roots, which had been dug with the digging stick. The lashings were wrapped many times around the crosspieces and then around the sides of the cradle where the crosspieces abutted. The end of the wrapping material in each case was tucked under the last loop of the material, so that it would not come unfastened.

The cradle hood was made of thin mesquite roots split in half and woven in wicker technique.

Discarded cradles were burned, buried, or merely thrown away. There was no idea of circumventing misfortune or evil magic in the disposal of the cradle.

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[50] Kroeber, Handbook, pl. 39, b.

Granary

The granary for the storage of mesquite pods, beans, and maize (removed from the cob) was of "bird's nest" weave and closely resembled the granaries of the Mohave and Cahuilla.[51] It was made of willow and arrowweed stems with the leaves on, and was covered with loose arrowweed and earth.

A small granary, about 15 inches high, which I saw at Charles Beans's residence was on a cubical stand of modern cut lumber about 2 feet high. The direction of the bird's-nest coil was clockwise. The top of the basket was covered with arrowweed and mud. Thorny mesquite branches were piled against the whole structure to render access difficult.

The size of the granary was dependent upon the amount of material to be stored. If the granary were erected far from the dwelling it was put on a high platform, as otherwise a coyote might tear it apart. If close to the dwelling, it was placed on the roof or on the ground.

Large, definitely coiled storage baskets, such as the Cocopa make, were not manufactured by the Kamia.

BURDENS

Babies in cradles are carried on top of the head or against the hip. A small child may be carried astride the hip.

Both the burden basket of California and the carrying frame of the Mohave were absent among the Kamia, according to the informant Charles Beans. Carrying nets, imported from the Diegueño, were used by the Kamia women to carry loads suspended on the back from the head. Nowadays a cloth is used instead of a net. Men are said never to have carried loads in this fashion.

MORTARS AND PESTLES

Bedrock mortars and meal brushes were unknown to the Kamia.

The only type of mortar (kamü) used by the Kamia was of cottonwood. The end of a piece of cottonwood trunk, about 14 inches in diameter and burned to proper length, was hollowed by fire. The cavity was not burned into the side of the log, as with the Yokuts wooden mortars of the San Joaquin Valley, but into the end. The depth of the mortar hole was about 12 inches and the total height of the mortar about 2 feet. It was often set into the ground a few inches, usually under a shade. There was no small secondary de-

[51] Kroeber, Handbook, pl. 60.

pression in the bottom of the mortar hole, as there is in the Yokuts wooden acorn mortar.

A small mortar, made with steel tools, which I examined, was about 13 inches high, 12 inches in outside top diameter, 8 inches in outside bottom diameter. For about 5 inches the upper part was cylindrical, then it tapered to the 8-inch base. The mortar hole was 7 inches deep and conical in form. The diameter at the top was about 10 inches, thus making the thickness of the wall at the lip about 1 inch. When not in use this mortar was kept bottom up and served at times as a seat. The length of log of which it was made had been cut with a steel saw.

Pestles (kutu) were long, smooth, and slender, usually of stone, but sometimes of mesquite wood. Charles Beans said some stone ones were 4 feet long, but this seems an exaggeration. The stone was obtained from the mountains near Jacumba and was apparently granite. The Kamia went to Jacumba for the stone. A pestle which Charles Beans's wife owned was of such origin. It was made by Charles about 1920 and was dressed a little with a steel hammer. The stone was very nearly of proper shape when found on a hilltop. It was 12 inches long and 2½ inches in diameter. When I examined it portions of mesquite pod were adhering to its striking end. The pestle was wielded with both hands.

The principal foods prepared by pounding in the mortar were beans, corn, pumpkin seeds, watermelon seeds, and mesquite pods.

METATES AND MULLERS

The metate (xipir) and muller (kapcha) were always of stone. The metate was of Pueblo type, inasmuch as the muller was always used with a forward and backward motion, never with a rotary motion. I had opportunity to examine two metates, one belonging to Charles Beans's wife, the other to Narpai's wife. Both were made by the men with steel hammers.

Charles Beans obtained the stone for his from the same hill from which he obtained his pestle. However, the metate appeared to be of stone other than granite. It was very close grained. Narpai mentioned the mountain Xapex, as lying southwest of the mountain Wikwiniʟ, as belonging to the Kamia of Xachupai, and as being the mountain from which they got their materials for metates and mullers.

Charles Beans got his metate and muller materials about 1917. He dressed the stone with a steel hammer. The metate, as seen in 1929, was about 2 feet long, 1 foot wide, and 3 inches thick in the center, thinning somewhat toward the edges. This thinning makes

the bottom slightly convex. The face of the metate was flat. The muller was as long as the metate was wide, and looked like a pestle. It was used with a back-and-forth rubbing motion. There was no rolling of the muller when in use, except that imparted by the flexing of the wrists. Both hands were used simultaneously in its operation. When I examined the metate it had bean meal on it.

When not in use the Kamia metate is kept bottom up, resting on the muller.

The material for Narpai's metate was obtained from a mountain in Arizona, presumably not an ancient Kamia source, although this was not ascertained. Narpai made the metate and muller with steel hammer and hatchet. It was convex-bottomed, 15 inches long, 14 inches wide at one end, 12 inches wide at the other. The muller was 14 inches long and pestle-like in appearance.

Charles Beans was unacquainted with the Mexican legged metate.

POTTERY

Potter's clay was obtained near the Colorado River, from below the surface of the soil. Powdered shards were mixed with the clay for temper. Coiling was with the aid of a paddle of willow wood, but I failed to learn the sort of anvil employed. The vessel was dried for one day, then fired. Only women made pottery.

Shapes were various, some low and flat, some high and deep, but no bottles like that shown for the Cahuilla.[52] For water transport, a 5-gallon or smaller globular pot without neck was used.

Patterns were in black and red, the former from boiled mesquite bark, the latter from a red mineral pigment obtained in the Jacumba region. Both pigments were said to be applied after firing.

Of pottery designs shown by Kroeber for the Mohave,[53] Beans recognized only figure 64b as Kamia; 64a and 65 he had never seen. The designs in plate 68 of the Handbook were also Kamia styles, Beans said.

Pot rests were "like bricks," of burnt clay. Stones were not used.

FIRE DRILL

According to Charles Beans, the fire drill was very simple. Both drill and hearth were of arrowweed, which was said to be superior to willow for the purpose. The tinder was of shredded willow bark.

The hearth was of old dry arrowweed stem, slit in half. It was used concave side up and a notch was cut in one side to form a chan-

[52] Kroeber, Handbook, pl. 62.
[53] Ibid., pp. 738, 739.

nel for the dust developed by drilling. After one use it was thrown away and another procured when a new fire was needed. In drilling fire a second person might hold the hearth. Rarely, the driller used his knee to steady it, if the hearth was long enough.

DIGGING STICK

The digging sticks were of hard screw bean or mesquite wood, about 4 feet long and about 2 inches in diameter. A tree was felled and the wood sharpened by burning. According to Charles Beans, no stone blade was used to sharpen the stick to a point.

The digging stick was held like a quarterstaff, usually with the right hand below the left. It was not used by women for edible roots, which were largely neglected in the dietary; but mesquite roots were dug with it. Men used the digging stick for digging out and killing beavers.

BOATS

No boats except balsas were made by the Kamia. The balsa (shikukul) was made of tule (tupish). It was described as 15 feet long and with a capacity of six or seven persons. It was paddled with a straight 6-foot pole, no true paddle being used. The balsa was composed of 12 to 14 bundles of tule, tied together with willow bark cordage. No wooden skewers were used as among the Mohave. The balsa was said to be used on the Colorado River rather than in sloughs.

Swimming the river and sloughs was probably the commonest method of crossing them. Sometimes a log was used as an aid at the time of inundation. Babies were often carried on the swimmer's back, but were also ferried in large pots.

MUSICAL INSTRUMENTS

Rattles, cane flutes, and cane whistles were the Kamia musical instruments. Drums, bull roarers, and musical bows were absent.

The cane flutes were said to be like those of the Yuma, and were described as having only four holes. These were covered by the index and middle fingers of both hands. Men played the flute, often after a full meal; several, at times, playing together. Sometimes dancing accompanied the flute playing. The flute was said to be never used in courtship.

A cane whistle with one hole, but without pine pitch or other material inside, was used. It was played with the index finger over the hole. Cane whistles were made and used by men for pleasure. No bone whistles were made.

Rattles were of three types: deer-hoof, pottery, and gourd. No turtle-shell rattles were used.

The deer-hoof rattle (tasiL) was used as accompaniment to the singing in the keruuk (mourning) ceremony. It consisted of a loop of cord with the hoofs attached. It was not fastened to a stick. The man who wielded it was the head singer for the ceremony. The rattle was shaken with a vertical downward motion of the right hand, in which it was held. The hoofs for making the rattle were removed from the deer's feet by boiling.

The Kamia stated that both the Yuma and Diegueño had the same type of deer-hoof rattle. It is of interest to note that the deer-hoof rattle was not used in the girls' puberty observances, as in central and northern California, but was used in mourning observances instead. Such was the case also with the Yuma.[54]

Pottery rattles were made by women. According to Charles Beans, these had seeds within them to produce the sound, which seeds were placed within before firing. Pottery rattles were used with various song cycles, including tipai. Charles Beans now sings tipai to the accompaniment of a tin-can rattle, in lieu of a pottery one. The decorations of the pottery rattle were in lines of black mesquite juice and red mineral pigment from Jacumba. The pottery rattles were smaller than gourd rattles.

For a gourd rattle, a ripe gourd was opened at the stem and cleaned with the aid of hot water. Hard seeds about the size of peas (called date seeds by the informant) were placed within and a willow wood handle fastened in the gourd with the aid of arrowweed gum. A string was let into an encircling groove in the handle, so that the rattle might be suspended when not in use.

GAMES

The ring and pin game, boxing contests, football, swimming races, lance throwing, arrow dodging, and the hoop and dart game were all lacking among the Kamia, according to Charles Beans.

I could learn nothing of lineage teams in the games that were played. Apparently each team comprised persons of different lineages. Many games were supervised by an umpire (pichau).

Girls juggled, using two or three small inedible melons. If three were used both hands were employed to catch them; if two were used a single hand only was used by the more skillful. Juggling was done either indoors or outdoors, standing or walking. Beans said that the Yuma have the same pastime.

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[54] C. D. Forde, ms.

Foot races (muyap) were run by young men only. The course was 100 to 150 yards and back to the starting point. The number of runners was two or three. They ran naked. There were no goal posts. Foot races might be run at any season. An umpire superintended the race. Spectators gambled on the result.

Foot-cast ball (kaal) was a men's game, played without goal posts, but with an umprie accompanying the players. People wagered blankets, horses, and money on the result. The balls employed were of mesquite wood and about 2 inches in diameter. Each of the two naked players had a ball. The distance covered was 2 to 3 miles and back to the starting place. The first to arrive there won. The ball was propelled by putting the toes under it, and at no time could it be touched with the hands.

Men and boys contested in distance shooting with the bow and arrow. Targets were not shot at, according to Beans. There was no umpire for the distance contest.

Shinney (mutash) was both a men's game and a women's game. The men's form of the game will be described first. The two teams comprised six naked men each. There were two umpires, who carried extra shinney sticks to replace those broken by the players. The ball used was of willow bark string, or sometimes of mesquite wood. However, the latter was considered dangerous, as a player struck in the head with it might be killed. The shinney sticks were of willow.

To start the game the teams lined up on opposite sides of the field, facing one another, and one of the umpires placed the ball in a hole about 2 inches deep in the center of the field. The best player of each team struck at the ball and tried to drive it toward his goal. Once the ball was out of the hole, all of the players of each side participated in driving the ball. When one side or the other made the goal the bets were paid. Then the other umpire placed the ball in the hole, the teams lined up as before, and went into action again. After a second goal had been made by either team, bets were again paid, and so on for ten plays. After ten plays the two teams changed sides.

When women played the game a willow bark string ball was always used. Only one umpire, a man, functioned in the women's game. Betting was as usual by spectators as well as players. The last Kamia women's shinney game, which Charles Beans witnessed, was played at Algodones about 1889.

The women's stave game (utux) was played with four willow sticks, semicircular in transverse cross section, three-quarters of an inch wide on the flat side and 6 inches long. (Pl. 2, *A*, *b*.) Fifteen stick counters of arrowweed were employed. These were placed

midway between the opposing players, who might be two or four in number. If four played, each pair of partners sat side by side, not opposite each other. In such case the two partners played before their opponents, so that the alternation of playing was between the two teams as wholes, rather than between four individuals as in whist or bridge. The direction in which the plays passed was contraclockwise.

Flat side up or round side up determines the manner of counting throws. A player takes the four staves in her hand and casts them forcibly on the ground (or on a metate, so that they bounce), end down. The aim is to have three flat and one round sides up at first. Until this combination appears, no throw counts. Moreover, this is the only combination which entitles a player to a second throw.

The various combinations count as follows:

3 flat, 1 round	3 points
2 flat, 2 round	2 points
1 flat, 3 round	1 point
4 round	4 points
4 flat	4 points

As there is no umpire for this game each player helps herself to the counters from the pile of fifteen. After these are exhausted counters are received from the opponent's pile. This process continues until one side has all the fifteen counters in its possession. This ends the game.

Peon (Kamia pyon), for which I could obtain no true native name, was the men's sitting game. It was played by two opposing teams of four players each. According to Charles Beans, no fewer than this played it, and moreover, there was no other guessing game for two or four persons to play. The informant mentioned the fact that the Diegueño also played peon, but he did not know if the Kamia game were derived from them or vice versa. Singing was an invariable accompaniment of peon playing by both peoples. In addition to the players singing in the Kamia game, the umpire also sang, first for one side, then for the other. Between the two teams a fire burned.

In a fiesta set for December 31, 1928, Charles Beans said he planned to sing peon songs, which he had heard in a dream about three years before. He had no name for the person he saw in the dream. All peon players got their songs in dreams, he said. Formerly, too, players took jimsonweed in seeking luck in playing.

The objects hidden in the hands were four blackened sticks of arrowweed and four white pelican leg bones, presumably tarsi. Fifteen arrowweed sticks served as counters. These were passed out by the umpire. The black and white pieces, which were hidden

in the hands, had strings attached which were slipped over the middle finger (formerly over the wrist, Beans said).

The players on one side hid all eight black and white pieces in their hands, which were held behind their backs (nowadays under a blanket). One man on the opposing side guessed the location of the black pieces. If he made many bad guesses another then tried the guessing. In calling, the guesser used directional terms. Thus, he called east or west, if the players were facing north or south. If they were facing north, the call "east" meant for them to expose their right hands, the call "west," their left hands. Each time he guessed the location of a black piece, it, and the companion white piece, were passed to his side. For the black sticks not exposed the guesser lost one counter each. When all of the black pieces had been guessed the guessers became the hiders.

The counters which the umpire handed out were all kept in the center first. Then, after they were distributed to the two teams as won, they were passed by the umpire from one side to the other as called for.

In hiding the black and white pieces each player on a team did as he liked. There was no one who directed how they were to be hidden.

TOYS

The only children's toy described was a willow-wood top, with a peg inserted in the top to facilitate spinning with the fingers. No string was used in spinning. An elder relative made such a toy for a boy.

CAT'S CRADLE

Both men and women played cat's cradle. The informant Charles Beans knew how to make two figures: Mourning dove and fox nose. These were similar to Cocopa and Diegueño figures.

DOGS

Dogs were said to have been kept by the Kamia before the whites came. Dogs were not eaten. They were named and addressed by their owners, but were not regarded as tipai (persons). The word for dog is ka'tsuk.

BIRDS AND FEATHERS

The eagle was an important bird with the Kamia. Its feathers were worn by men and boys, though not for distinction in war, or chiefship. For feathers, the adult birds were shot with the bow.

and arrow or captive young birds were killed. The Kamia went to the mountains to get them or bought them from Diegueño visitors.

The aerie whence a young eagle was taken was not regarded as the property of any one lineage. Anyone might take eaglets from such an aerie.

The turkey vulture (*Cathartes aura*) was not eaten. Gambel's quail (*Lophortyx gambeli*) was eaten, also the passerine dove (*Chamaepelia passerina*). The mourning dove (*Zenaidura carolinensis*) was not eaten. It was called a tipai (person), because certain souls of the cremated dead were believed to be incarnate in these birds. (The Kamia believed in more than one soul, as discussed elsewhere.) Gambel's quail and the passerine dove were not tipai, though the former was said to have been in the beginning of the world. The native name for the mourning dove was kiyaskwi, for the passerine dove kuL.

The white pelican and the crow, whose feathers were used on the stabbing pike (akwil) were both tipai (persons).

Other birds which were tipai were the roadrunner (*Geococcyx californianus*) and the mockingbird (*Mimus polyglottus*). The latter was called tuwilaú. Birds which were tipai were not eaten. Mammals which were tipai were the coyote and the wild cat (nyimet). The latter, however, was eaten at times.

The Kamia, like the Diegueño,[55] kept the mockingbird as a cage bird. The bird was not sacrificed like the eagle, but was turned loose at the owner's death. The arrowweed cage (wyauwito) was rectangular and lashed with mesquite-bark string. Captive mockingbirds were fed on "grasshoppers" (tumau), which also served as fish bait. (The tumau is described as looking like a grasshopper but having longer pointed wings.) Mockingbirds were kept for pleasure, not food, and with the coming of Caucasians were occasionally sold to them.

The mimicry and song of the mockingbird seem to have appealed to the Kamia, as they do to modern Americans. The informant Narpai said that he had heard that mockingbirds impart information to their owners, but he did not know the nature of it. Mockingbirds, he said, know all languages. If the owner of a mockingbird dreams that his bird is singing in English he will be able to learn English quickly. Not every mockingbird owner was able "to get dreams from his mockingbird." Usually only certain elderly people were able.

Narpai made for me a mockingbird cage of the ancient type. (Pl. 2, *B*.) It was made of arrowweed sticks, but tied with cloth instead of mesquite-fiber string. The work was done on the ground

[55] Spier, Southern Diegueño Customs, p. 308.

and the sides built up first. Then they were tentatively bound at the four corners by a cord, one end of which was left long. The long end was used to lace the pieces together tightly at the corners, winding over each projecting stick. After the corners were thus lashed the bottom sticks were put on. All were laced on at the same end first, then the opposite ends were all laced down. Next the top was put on in the same way, except for a space about 3 inches wide and the full length of the cage. This was later built in from both sides with short lengths of arrowweed, leaving the central third of the opening for the stick-mat door. The short sticks on either side of the opening were bound on after the willow withes mentioned below had been put in place. In getting the cord through the interstices, Narpai used a small stick where his fingers would not go. A 6-foot willow shoot split in half with the hand, after being started with a knife, was bound around the cage, beginning at the vertical edge of the doorway. Two others were then added near the ends of the cage. The mesquite-bark string used anciently was of sufficient length so that no knots were tied in it.

EAGLE SACRIFICE

Feathers from a sacrificed eagle were prerequisite for the holding of the keruuk mourning ceremony, as feather bunches had to be made for each deceased individual, who was also represented by an image. The eagle killing might take place many months or a year before the keruuk ceremony. The Kamia declared the eagle sacrifice to be an ancient custom of theirs which the Yuma did not share. The Yuma, they said, purchased their eagle feathers from the Mohave at $15 to $20 a bundle 2 inches in diameter, or at $2 a feather.

The eagle might be purchased from the Diegueño, the price being one horse, or it might be captured by a Kamia man who sought out a nest in the mountains and removed the eaglets from it. Usually two were taken if found in the nest. The eaglets were placed in a cage of "wild grass" which grows in the mountains, and upon the arrival at the Kąmia settlement were transferred to a cage of willow and arrowweed. The eagle keeper fed them on rats, rabbits, and the meat of larger mammals. Drinking water was supplied in a painted pottery dish and emptied and replenished every time an eaglet drank. An eagle "will not drink from a plain bowl, because he is a tipai (person)." I could learn of no evil consequence to the keeper or the community if the eagles were neglected. The keeper had to remain away from his wife and eat no meat or salt during the two or three months he kept the eaglets.

The eagle was killed for its feathers,[56] and not as a messenger to a dead chief.[57] The Kamia rarely plucked the feathers while the bird was living. No feather skirts were made.

If the eagle keeper died his charge would be dispatched with a club and cremated on a small funeral pyre shaped like that for human beings.

For the eagle sacrifice the populace assembled at a large house upon invitation. A fire was built in the center. The killer was not the keeper, but a man specially hired for the purpose. Possibly the man was a Diegueño, for Narpai said that on the occasion of the eagle sacrifices he had seen the killer was always a stranger to him. The participants in the ceremony sang and danced clockwise around the fire for the first half of the night. The killer danced, carrying the doomed bird. About midnight the eagle cried out and died in the man's arms. It was said that no one killed it, but that the singing of the old men caused its death. The remainder of the night and the forenoon were spent in wailing for the eagle. Then followed a feast and the people returned to their homes. No doubt the killing was by pressure over the heart or lungs.

The eagle was skinned by cutting it down the belly. The skin was dried and the feathers removed when needed for the keruuk mourning ceremony. The time for the keruuk might be arranged at the eagle killing.

The body of the skinned eagle was wrapped in clothing and buried, not cremated. No special person seems to have had this duty. The carcass "could not be thrown to the dogs, because the eagle was a tipai (person)." Dogs were not tipai.

CHIEFTAINSHIP

The chief (kwaipai) was said not to be an hereditary officer, though the last two were related as father and son. A man was selected for his good qualities and because he was well liked and a good talker. The last Kamia chief died about 1905. None has been selected since, because the people are too few and the reservation life probably militates against the continuation of the office. If a chief became unsatisfactory another was put in his place. Old age was the principal cause of retirement. Neither selection nor loss of office appear to have been through strictly formal procedure. No one moved that a chief be recalled. There was just a general public sentiment among the men of the community, which no doubt reached the ears of the chief and resulted in his withdrawal. Women were said to have no voice in such a matter. There were no female chiefs.

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[56] Dubois, Amer. Anthrop., n. s. VII, p. 625.
[57] Waterman, p. 314.

The chief appointed an assistant, called by Beans a "policeman." The chief's principal functions were talking at funerals and aiding in the mourning (keruuk) ceremony. He did not tell the people when to plant.

There was but one Kamia chief at a time and he functioned for the whole tribe as the Yuma chief did for his tribe. He was purely a civil and ceremonial officer. There were no lineage chiefs.

The last two consecutive Kamia chiefs were of the kwatL lineage and were father and son. Beans could not recall the lineage of the preceding chief. The last chief, Tomexaman, "feathers stuck flat on the ground and rising to an erect position," was also called Ortega. He resided in Xatopet, after the exodus from Xachupai and Saxnuwai, and at the time the informant Rosa Narpai was living in Xatopet.

Before Ortega, his father, Xaksem, "to drink water," was chief. He was also called Fernando. He was the chief Fernando mentioned by Heintzelman,[58] as chief of 254 Kamia. He was chief of the Kamia "near Salton Sea," in other words in Imperial Valley. He moved to Xatopet, probably in the general exodus already described. He lived there many years. Upon his death his son, Ortega, was appointed chief of the Kamia by the Yuma chief Pasqual. This alleged appointment by the Yuma chief should very likely be regarded as merely indicating the influence of the powerful and protecting Yuma in Kamia affairs. This influence was no doubt especially strong after the Kamia left their homes at Xachupai and Saxnuwai in the Imperial Valley.

Along with other Diegueño, the chief Sipankwoxi, mentioned by Spier,[59] was a visitor among the Kamia at times. Among the Kamia he was also known as Altul. He was said to have had a third name. He sang songs of the chayautai cycle, which was common to the Kamia and Diegueño.

AGE TERMS

The Kamia, like the Cocopa, employ a series of terms for males and females at different ages. For males they employ the following: imai, boy baby; imi', small boy able to run about; imik, a big boy with nose not yet pierced; ipach, youth with nose pierced, old enough to work and to marry; griak, worker, usually married; griakimum, too old to move about. For females they employ the following: isait, girl baby; isait imi', small girl able to run about;

[58] Heintzelman, p. 53.
[59] Southern Diegueño Customs, p. 309.

ikai, girl about 6 years old; ihai, girl about 12 years old; iak, menstruating girl, marriageable; makul, woman with children, also old woman after menopause.

The aged were never put out of the way.

CHILDBIRTH

For two or three months before the advent of a child the expectant mother ate no meat, fish, or salt. It was believed the foetus would disappear if she did. The husband might not plant or harvest for two or three months before the baby was born.

For four days before childbirth a woman relative or friend attended the expectant mother and watched her. At birth, which took place indoors, as the bush was too cold, two or three women attended. They held the mother around the waist and shook her to aid the parturition. The mother was seated on a willow-bark blanket placed on warmed ground, which was usually obtained by raking away the fire. Cold weather was thought to be harmful to the mother and apt to prevent the free passage of the placenta. The latter was usually buried to prevent dogs eating it. There was no supernatural punishment if a dog did get it. The mother washed her womb with warm water. The baby was washed with warm water, applied with the hand.

After childbirth a woman might not eat meat, fish, or salt for two or three months. No harm would befall the baby if the mother broke the rules, but the mother would become ill, and blood would be discharged from her vagina. The husband must observe the same food taboo as the wife. He might hunt, but he must give away the kill. He could not plant or harvest for two or three months. He ate no salt for four days after the birth and no meat for three months. If he broke the taboo, he could beget no more children. There was no harm to the baby. There was no god particularly connected with childbirth.

UMBILICAL CORD

The umbilical cord was cut with a sharp stone about 6 inches from the baby's abdomen. The cord was coiled up in the umbilicus and plastered in place with hot mud, which was changed morning, noon, night, and midnight for four days. Then the umbilical cord came off by itself. In washing an infant, care was taken not to put water in the umbilicus until after the cord had dropped off. Then the umbilicus was rubbed with charred pumpkin seeds for four days. The baby and everybody "feels good" when the umbilical cord has

come out. There was a feast and celebration, which friends attended. Women friends came and cooked. The mother of the baby did not cook. The father of the baby buried the umbilical cord a foot or two deep.

TWINS

Twins were welcomed by the Kamia. Their parents in particular welcomed their advent and people in general liked them. The first twins in this world were the culture heroes called Madkwahomai, who came from the mountain Wikami and who were the sons of the god Pukumat. One of them married a Kamia woman at Saxnuwai and she bore twins.

The elaborate eschatology of twins recorded for the Cocopa was not obtained among the Kamia. Although the informant Narpai had much to say about souls, he could mention nothing distinctive about the souls of twins. Their origin and destiny were like those of the souls of non-twins.

MENSES

First and subsequent menstruation were denoted by the word laark. As with the Mohave, observances were scant for the first menstruation. The elaborate "roasting of the girls," found in the western part of southern California, was lacking. Specifically, there was no face paint used, no tobacco drunk, no crescentic stone used, no sand painting, no lecture, no race, no rock painting, and no delousing.

At the appearance of her first menses a girl was put to bed for four days and nights. During that time she drank hot water and ate only corn or other vegetable mush. Meat and fish were taboo. She was washed with warm water by her mother. For forty days thereafter she was not washed. For four days after her confinement she must work hard. While the girl was confined women sometimes sang songs referring to the girl, but there was no dancing, nor was there a special rattle used. If the girl went out to attend to nature she was accompanied by one or more women. She used an arrowweed scratching stick. The supposed penalty for scratching with her fingers was loss of her hair.

The observances at the first menstruation were not repeated for subsequent periods. However, at each subsequent menstruation a female must refrain from eating meat or fish for four days. Also she must not cook food. Willow bark was worn to absorb the blood. The fear of the menses on the part of men has now disappeared, informants said, and a man resumes relations with his wife after the four days. I could not learn the length of the taboo period in earlier times, but the implication was that it exceeded four days.

NOSE PIERCING

Piercing of the nasal septum constituted a boy's puberty ceremony with the Kamia. Without the operation a youth could not marry. Parents who could not collect sufficient food to entertain the guests after the operation might postpone their son's initiation. A single boy would not be operated on, but always four boys at a time. If there were insufficient boys the ceremony was deferred until the quota of four was obtained. The chief took the initiative in the matter, but obtained the consent of the boys' parents.

An important prerequisite for the ceremony, besides the proper number of boys, was ample food, which was supplied by the parents of the boys and the chief. The latter might give two or three sacks of cowpeas to the boys' parents for the feeding of the home people and visitors.

When the time came for the operation the chief's "policeman" (süpaiwikir) or "policemen" (for a chief might have two or three such deputies) took the boys from their homes during the second half of the night. They were taken to a place in the bush. There, just as the sun rose, the four boys were operated on simultaneously by four male operators. Needles of screw-bean wood were the instruments. The operation was always performed in the hot season. Besides the operators, only the "policemen" and the chief were present. The latter remained at a little distance.

After the operation the boys were forced by the "policemen" to run 6 or 7 miles to a house, then back again. They were thereafter kept at the place of operation for four days, under the watchful eye of the "policeman." They ate warmed watermelon and corn mush only and drank water during this period. Each morning the "policeman" washed their noses with hot water. During this period men and women sang both by day and by night at the place of confinement. On the morning after the fourth night the boys went home.

Dreams which the boys might have at this time were not significant, for the boys were too young to dream of becoming shamans, so Charles Beans said.

For a month the boys remained naked. They refrained from eating fish, deer, and jack rabbit. During that month "water" might come from the nose, a phenomenon which frightened the boys. The hole in the septum was kept open with an arrowweed stick. Later, strings of white clamshell beads were worn pendent from the septum, sometimes reaching below the lower lip. Often two or three such strings were worn at a time. To eat they must be held up.

The nose piercing is said to have been in imitation of the nostrils of various species of large birds. I could not learn that non-piercing had any serious results for a man's soul in after life.

MARRIAGE

In olden times a boy might marry in two or three months after nose piercing. A boy was sometimes married at the age of 15. Without his nose pierced a boy was not marriageable. There were no child betrothals. At marriage a young couple sometimes adorned themselves with paint and beads.

Boys and girls played together. Perhaps at a fiesta a couple met. They might have intercourse if they liked one another. No presents need be given; in fact their parents might know nothing about their attachment. If a boy and a girl decided to marry the boy took the girl to his father's house and lived with her. Then the boy's parents and family took food to the girl's parents and they feasted for a day. Thereafter they returned to their home. The girl lived with her husband's parents one or two months, then she and her husband went to live with her parents for a year or two in their house. Sometimes they lived five, six, or seven years with the girl's parents. The boy helped in the man's work with his father-in-law and brothers-in-law. There was no mother-in-law taboo.

The taking of food back and forth by the parents of a young couple took place whenever there was an abundance of food. These reciprocal feastings might take place over a number of years.

Sometimes a man who was a good hunter gave deer to the girl's parents before marriage. This was the nearest approach to a bride price, but was really not that. Such a man was desired as a son-in-law.

Sometimes, in olden days, a man might get white or blue shell beads. These he might give to a woman's father and then marry her. No Indian has such beads now. They came from the Gulf of California.

A man must not have intercourse with his pregnant wife. He might sleep with her for one month after conception, but that was all. For a man to have intercourse with another woman while his wife was pregnant was not harmful to the foetus.

Anciently a man might have a succession of wives—"ten or twenty." He stayed with a woman a year or two, then went to another. Nowadays a couple live together for life. Sometimes a man, usually a chief, might have two or three wives simultaneously, not sisters, whom he kept in a house of his own. One night he slept with one, next night with another. When a chief had, say three wives, no one was head wife. They shared him equally and were not jealous.

Sometimes a man married two sisters and lived with them in their parents' house. At times a man married his dead wife's sister or his dead brother's widow.

No marriage to a person with the same blood, e. g., a cousin, was permitted. However, there was no punishment for a man who had intercourse with a cousin. Nevertheless, Charles Beans had never heard of such a case. He did know of a Mohave so married at the present time.

If a man caught an adulterer with his wife he did nothing to either. He merely discarded the woman and got another.

If a woman did not cook and perform her other duties her husband might discard her. However, when a young couple lived with the wife's parents usually the wife's mother did the cooking.

TRANSVESTITES

Transvestites of both sexes occurred among the Kamia, but none are living now. Mythology describes a culture hero or heroine who was a hermaphrodite. Charles Beans knew of a Yuma female transvestite who married another woman; also he knew of Yuma berdaches. He did not know if sucking or sodomy was practiced.

No instances of prostitution were known.

FUNERAL

If a person were apparently dying, a male relative, usually of the same household, might cut and stack wood in readiness for the funeral pyre. Wailing started, too, before the person was dead, but when it was obvious that he was dying. Children and babies were cremated, as well as adults, as among the Yuma.

At a funeral for a Cocopa woman held at the foot of Eighth Street, Yuma, just after Christmas, 1928, Charles Beans and some other Kamia constructed the funeral pyre. Beans had taken the office of funeral fire tender at the request of the preceding incumbent, later deceased. Neither Beans nor Narpai could give a term for funeral fire tender. They said no dream was necessary for a person to attain this office. There was one man who attended the funeral pyre until it was entirely consumed. To facilitate the burning he employed a long stick to turn unburned parts and added more wood if necessary.

The relatives, close and distant, of a deceased person cut their hair, usually bobbing it about the shoulders. Old women might cut theirs very short like a white man's hair. No pitch was put on the face or chest. The name of the deceased might be mentioned during the mourning before cremation, but thereafter it was taboo.

There was no corporal punishment for breach of this taboo. Charles Beans could give no reason for the taboo.

Formerly the property of the deceased was destroyed and the horses killed. Nowadays the latter are given away. The clothes of the deceased were burned on the funeral pyre. Dogs were not sacrificed, but were allowed to remain in the settlement.

Charles Beans said that in former times the heart was removed from the burning corpse by a man who ran east with it and buried it. He was pursued as he ran. A mythical example is related in the origin tale beyond. Beans could not say if this man wore a special costume. Under Eschatology I have described the interpretations placed on slow and rapid burning of the heart.

At the funeral of the Cocopa woman just after Christmas, 1928, Charles Beans, as funeral orator, had the following to say to the mourners who surrounded the corpse under a shade:

"Boys, old men, old women. Come together now. As you feel badly, I also feel badly. I asked the people, the boys and the men, to come here to help you. It was not known for a long time on which day or in which week the person would die. [She had been ailing, but was taken seriously ill while attending the Christmas celebration at the Methodist Mission on the Yuma Agency.] It will be that way with every person: Yuma, Kamia, and Cocopa. I help them all.

"I come and look at you all together. It is all right. I am glad for that. The gods will cry too. This woman has died and will eat no more. She knows no more of anything here. Nobody sees her now. She is dead. Everybody expected her to die. Everybody feels badly. She will never eat again. She will just remain there. If nobody died, everyone would worry looking around to find enough to eat. All cease work when they die and just stay there. Everybody stay here now and listen to me. When do you want to burn the body? Maybe this evening or maybe at midnight? I think we'll start to burn the body about midnight. That way it will be all right."

Sam Barley, an aged Cocopa funeral orator, said to Charles Beans after the above speech: "I am cold. I do not like to hear this. Some day I shall be cremated myself." Then Charles said to him: "It will be all right for you to make me funeral orator in your stead." Sam taught Charles the funeral oration in Cocopa. Charles later told me that he could now give the oration in Kamia, Cocopa, Yuma, and Mohave.

At the funeral described the Cocopa chief later talked in the same strain as Beans.

The funeral pyre was constructed in Kamia style over a pit 2 or 3 feet deep. It was like a Yuma funeral pyre, but unlike a Cocopa funeral pyre, which was pitless. The logs were arranged to form an oblong box open on top and at the west end. In this instance wire was used to lash the logs in place. After putting the corpse therein more logs and dried arrowweed were added. The burning of the corpse took place at 2 a. m., after all day and much of the night had been spent in wailing. Apparently a factor which protracted the mourning in this instance was the belated arrival of the sister of the deceased, who had to be brought by automobile from somewhere in Sonora. The Cocopa shaman, Mike Barley, who had attended the sick woman, was among the mourners.

A single torch of dried arrowweed served to ignite the pyre. The following morning the hole was filled with earth over the calcined bones, and water poured over it to aid in packing it solidly.

The woman had died during the night. The following morning Charles Beans and his helpers were busy cutting wood for the pyre. By noon they were through. Charles ate luncheon, but thereafter did not eat for 24 hours. He said that if he ate during this period the ghost might "catch" him. After 24 hours he was unrestricted as to diet. Everyone else ate breakfast the morning after the cremation, but Charles, on account of having made the funeral pyre, could not do so. This, he said, was old Kamia and Cocopa custom. Charles contrasted this with the Yuma practice of eating a little and the Jacumba Diegueño practice of feasting at the funeral. At Jacumba the body was in the house, the feasting outside.

MOURNING CEREMONY

The Kamia mourning ceremony (keruuk) was a four-day affair. For it a semicircular shade was erected. This was roofed and walled with arrowweed except for its one straight side which was open to the east. It differed from the Yuma structure, which was rectangular.[60] The posts within the structure were a stride and a half apart, but in the diagram drawn by the informant their spacing was not even. The diagram here presented (fig. 2) is based on that drawn by the informant.

The accompanying diagram shows the plan of the keruuk shade. In addition to the eight large posts, which alone are shown, there

[60] Charles Beans described the Kamia structure as rectangular, Narpai and Charles Hilmiarp as semicircular. Beans also described an unroofed court in front of the structure, open to the east, but flanked with brush walls continued out from the side walls of the shade. The other two informants denied this feature. Beans had seen but two Kamia keruuk ceremonies, both in his childhood, and the second when he was about 12 years old.

were many small ones in the semicircular wall. Arrowweed was leaned against the sides to form the walls. Horizontal stringers, tied in place midway between the ground and the roof, served to support it. The roof was about 7 feet above the ground. The width of the house was given as 22 feet by Narpai and as 24 feet by Charles Hilmiarp. The length from front to back was 30 feet. Earth was heaped against the arrowweed walls to a height of 2 feet and served to keep the arrowweed in position without tying. There were two fires, one within and one without the shade.

Behind the fire within the shade was placed much food which was given to guests. From the roof beams bunches of feathers were suspended, one bunch for each image which was used in the ceremony. The bunches were tied with string and suspended by string. Roadrunner or flicker feathers, or both, were put in the center of each bunch; eagle feathers surrounding them. A feather bunch, like an image, was made for each person who had died. The eagle feathers were always from a sacrificed bird, which might have been killed as much as a year before the keruuk ceremony.

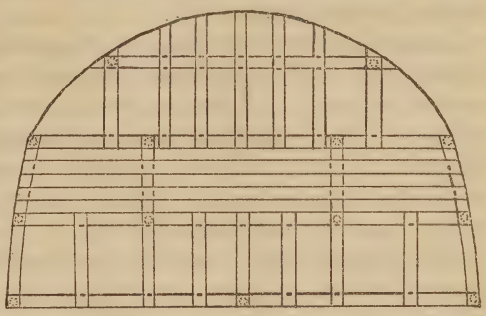

FIGURE 2.—Schematic drawing showing arrangement of posts, roof beams, and semicircular arrowweed wall of structure used in image ceremony

The mock fighting that characterizes the Yuma mourning ceremony was absent from the Kamia affair; nor were the feathered stabbing pikes (akwil) used in any way.

Dancing was contraclockwise and performed only at night by both men and women, from sundown to 4 a. m. The participants rested and slept in the day. The season for the ceremony was the hot season, often about September when watermelons were ripe.

The shade used for the ceremony was burned just before dawn on the fourth night. On that night, too, the offerings to the dead were burned, the man in charge putting them on the fire. Blankets and clothing were burned for the dead. Beans was not certain just what benefit the dead derived therefrom. Much of the clothing burned as offerings was new. The clothing of the deceased had been burned at their funerals.

The dancers sang songs of the chayautai cycle, while the mourners remained within the shade, wailing. The chief singer (or singers in general?) was called etskaiyau. The songs were said to be different from those used by the Yuma in their mourning ceremony.

The leader of the keruuk wielded a deer-hoof rattle of a type like that described by Forde for the Yuma.[61] The leader danced and sang while using the rattle. Three or four others accompanied him in song in the circle of dancers.

One man was the fire tender, who gathered wood during the days for the nightly fires. He had helpers.

According to Beans the ceremony was held for as many as 10 or 12 dead at times. More often, it would seem, it was given for a single individual.

The mourners remained inside the keruuk shade most of the time. Often they walked about therein while crying. Children were allowed in the shade.

Images (piskwa) were made of a tall grass, not tules, tied with mescal fiber. The grass was obtained only near Jacumba, in Diegueño territory. All images, both of males and females, were made by men. The arms, legs, head, and body were all made of the same materials. Beans did not remember how many images there were at the last Kamia keruuk which he saw when 12 years old. Each image stood for but one individual.

The images were made on the fourth day. One man had the special business of going for the materials. Outsiders (i. e., persons not related to the deceased individuals to be represented) made the images. The mourners did not make them. Images were part of every keruuk ceremony and were made for children as well as adults.

Each image was carried by about 10 men who made the circuit to the right around the shade. Then it was placed on top of the shade, face down, feet to the east. That night the images were again carried, this time around the fire in front of the shade, and finally deposited again on the roof of the shade, to be burned with it just before dawn. The clothes offered were thrown on the fire to burn. Food was not burned but was given away. (According to Charles Hilmiarp the images were burned on the fire 50 yards in front of the shade. This may be a Diegueño rather than a Kamia procedure.) [62]

The keruuk ceremony was not supervised by the man or men giving it, nor by the chief. An outsider was invited to take charge. Women never gave it. A man made it only when he had sufficient food to feed the assemblage. One year or two years after the death the bereaved man planted watermelons, maize, teparies, cowpeas, and pumpkins "for half a mile," so as to be sure of ample provisions for the keruuk which he purposed to give. Sometimes whole sacks of teparies or cowpeas were given away to visitors attending a keruuk.

[61] Manuscript.
[62] Davis, p. 21.

The keruuk was not an annual affair, but was held only after a death. The chief (kwaipai) might hold the keruuk for one of his dead relatives, just as anyone else did.

The person who gave the ceremony informed the chief when he was in readiness. The chief directed men and boys to help the man build the shade for the ceremony. The chief sent his "policeman" to notify prospective guests.

Usually it took two days to erect the structure. The four-days' ceremony followed immediately upon its completion.

Sometimes two or three men combined to give the ceremony. Then the burden of supplying food for the participants was shared. Those who gave the ceremony ate nothing but corn mush for the four days during which the ceremony continued. All other relatives of the deceased did likewise. Unrelated visitors, however, did not stint themselves as to food.

In addition to food, tobacco and cane for pipes were furnished by the givers of the ceremony. The tobacco was brought from the Jacumba region. The cane was brought in raw state and placed in a pile. Each smoker helped himself to a length for a pipe.

Apparently people who cried at the keruuk might do so for their own long dead relatives, who might not be represented by images. However, the primary purpose was to cry for those represented. The Yuma cried at the Kamia keruuk and vice versa.

Beans and Jose had heard a story about the keruuk ceremony originating at Mount Wikami, but neither remembered it. Narpai's account is given in the origin tale.

PERSONAL NAMES

Children were not named until several years of age, then by the parents without ceremony or feasting. The naming age was usually between 6 and 12 years. At nose-piercing a boy received a new name. A girl, however, did not receive a new name at puberty. She usually kept her girlhood name, if she had any, for life. A man might change his name two or three times after receiving the nose-piercing name. These later name changes were ceremonial affairs to which the chief invited all of the people and visitors. The name change was a matter of considerable expense, as a public feast must be provided by the man who took a new name. Charles Beans said that he would like to take a new name, but could not now afford the expenditure, especially since Cocopa and Yuma, as well as Kamia, would attend the feast. So far as I could learn new names were not war honors. Many people might propose names for a man, mentioning birds, fishes, and mammals. The man sometimes indicated his choice.

Charles Beans has had only two names: his childhood name, which he could not remember, and Kaimai, his present name, which was given him after nose-piercing. It was applied to him by a group of people, not by a single individual.

Narpai, the name of one of the two principal informants, means "to look at something." He received this name immediately after the puberty ceremony of nose-piercing, which for him took place at Xatopet. His earlier name was Leat, "old man," given him by his relatives when he was 4 or 5 years old. On the occasion of the bestowal of the name Narpai many people of different lineages came to his house and called him by the new name, which they had selected for him. They were feasted by his parents. The affair took place by daylight.

Macham, "twilight," is the name of a man of the isix gens of the Cocopa. The name, however, is Kamia. Macham's mother was a Kamia of the kwatL lineage, his father a Cocopa of the gens isix.

Men were addressed more often by personal name than by term of relationship.

There were no lineage names for men comparable to the gens names for men among the Pima. Nor were there lineage names for women like the totemic names of the Yuma and Mohave.

Charles Beans stated that it was the custom frequently not to name a female but to call her only by the relationship term. Beans cited the case of his married daughter, who has no Indian name. His wife, however, has a name. Two girls, of 6 and 12 years of age, neighbors of Charles Beans's, were nameless in 1929.

DANCES

Dancing consisted of little more than a forward and backward marching of two or three singers. Often two lines approached and receded from each other, one of singers, the other of girls or women.

The term for dance is ima. The three characteristic Diegueño dances were unknown, according to Charles Beans, to wit: whirling, "war," and fire dances. He said also that there was no feather regalia of any sort.

SONG CYCLES

The Kamia song cycles were similar to those of their Yuman neighbors. By no means did every Kamia man sing a song cycle. Narpai learned none. Charles Beans, on the other hand, is the only Kamia who sings tipai songs. The presence of so-called enemy songs, like those of the Southern Californian Shoshoneans, was denied by Charles Beans.

The songs were sung at fiestas and at mourning ceremonies. Nowadays they are sung on the Fourth of July, Christmas, and New Year. The same cycle may be sung for diametrically opposed occasions. Thus the same songs might be sung at a mourning ceremony as on a joyous occasion. Shamans were said not to sing these songs for curing. They had their own special songs for that purpose.

The remarks by Charles Beans give some idea of the manner of transmission of songs. He learned the tipai songs by hearing his paternal grandfather sing them. He received no training in singing them. The words of the songs were meaningless. There are many songs of the tipai cycle. Charles said that "he feels good" when singing them. Although he is the only tipai singer among the Kamia, anyone may sing the songs as his helper. Even a Yuma or Cocopa might do so. The tipai songs were sung for a "good time," also at mourning ceremonies. If a kwaxa (Charles's lineage) man died Charles would sing tipai songs at the mourning ceremony.

Cycles were not discarded because the singer died. The only cause for disuse was that no one had learned the cycle prior to the singer's death. Apparently the person who learns the cycle need not be of the lineage of the singer at the present time. Formerly many cycles were owned by certain lineages. Only men could sing them. Assistant singers might belong to different lineages from the owner, or even to different tribes.

There were no stories connected with the songs. There was, however, a very simple form of dancing. As I witnessed it on one occasion, two singers faced a line of four girls. These lines advanced toward one another and receded a number of times. This took place under a shade on Somerton Avenue, Yuma, although it was January. The step was a march step rather than a dance step.

Kamia mythology says that the song cycles came forth as spirit personages from the great ocean snake, which was burned at Mount Wikami in mythical times. In that way the different cycles reached different peoples. Now, however, persons learn the songs by listening to others sing, and not by dreaming or by supernatural experiences. Thus Macham, a young man living near Narpai, learned the tomanpa cycle from an old man. (Macham's father was a Cocopa of the isix gens, his mother a Kamia of the kwatʟ lineage.)

The following are the song cycles of the Kamia:

Chayautai. Last singer, an old man, died. Sung only at mourning (keruuk) ceremonies. Other cycles may be sung at mourning ceremonies, but this cycle was restricted to that one use. The Diegueño chief Sipankwoxi [63] was a singer of this cycle too.

[63] Spier, Southern Diegueño Customs, p. 309.

Sii (salt). This cycle is owned at present by John Gray, a man of the lyacharp lineage. Two or three other men help him sing.

Tuharl. The owners of this cycle were of the tumau lineage, but all are dead. Therefore it is no longer sung. There are tumau women living, but no men. Among the Diegueño it was also sung by members of the tumau lineage.

Djakwar. Sung by Harry (Kamia name Takaiв), a Kamia residing at Somerton, Arizona. It seems likely that this is Spier's Diegueño xaxwar.

Tomanp. No information as to singers, except Macham (half Kamia, half Cocopa).

Hasachiox. No one sings this cycle now. It did not belong to any special lineage.

Orup. No information as to singers.

Keruuk. Everybody sings.

Horloi. No one sings it now, because the last man who knew it is dead. It did not belong to any one lineage.

Tipai. Sung by Charles Beans of kwaxa lineage.

Isa. Nobody sings it now, for none knows it.

Nyimisiauk. Rafael, a man of the hiLmiarp lineage, sings this cycle.

The following Diegueño song cycles listed by Spier[64] were not employed by the Kamia: akwil, awikuntci, ispa, kuyahomar, nyikwar, parhauitciohis, xeltemataie, and tasitL. Charles Beans said the last name means "to rattle," and was not singing.

The following Diegueño song cycles listed by Gifford[65] were not sung among the Kamia: hataumaltaiye, atcawhal, urorp (warup), hurlturli. The last had been heard among the Diegueño by Charles Beans. He had also heard the next to the last sung by a hiLmiarp man from Jacumba who was visiting among the Kamia.

NUMERATION

The Kamia numeral system was decimal, as the words given below indicate. The informants, Charles Beans and Jose, disagreed as to how the fingers were used in counting. The former said counting began with the thumb, but old Jose actually touched his little finger first in counting.

1, shit; 2, wok; 3, muk; 4 ^{s}baup; 5, tarûp; 6, kumpuk; 7, ^{us}kai; 8, uk; 9, imkamuk; 10, sahuk; 11, maishit; 12, maiwok; 13, maikamuk; 14, maisbaup; 20, sahuk^{a}wok; 21, sahuk^{a}wokmaishit; 30, suhuk^{a}muk; 100, sahukasahuk.

[64] Op. cit., p. 327.
[65] Clans and Moieties, p. 172.

DIVISIONS OF THE DAY

Charles Beans gave nine names for divisions of the day, as follows: yasbak, sunrise; bakshep, forenoon, sun approaching zenith; yaulp, noon; tunais, afternoon, sun descending; yakap, sunset; niaukap, twilight; siam, dark, night; yamsuwip, midnight; saptiai, dawn, before sunrise.

PHASES OF THE MOON

At the appearance of the new moon boys ran and shouted. If they did this they were believed to grow rapidly and to avoid illness. It is said that they acted thus because they "felt good." There seems to have been no idea of the new moon symbolizing resurrection. Nor did the Kamia conceive stars as the souls of the dead.

Names for four moon phases were obtained. The word for moon is xashá; the new crescent moon is xashá upa; the waxing half moon is xashá tai; the full moon xashá yemtuwap; and the last quarter of the moon is xashá wispa (literally, dying moon). When the moon disappears it is "dead." The appearance of the new moon in the west inaugurated each month.

MONTHS

The Kamia used only six month names which were repeated in the course of the year. According to the informant Jose, these were, in order, xashakwatL, xashayamtcap (December 21, 1928, fell in this month), xashatai, xashatinya, xasha.intca, xashapisü. The spring month xashakwatL begins the year (matam). This coincided with the budding of the mesquite trees; in xashapisü (July) the mesquite pods ripen. The years were not named. For three month names the following meanings were obtained: kwatL, skin or hide; yamchap, white; pisü, going to rain (paau means rain).

The months were the subject of discussion by elderly men. The wild cat (nyimet) was the reputed repository of knowledge about the moons, as among the Diegueño.[66]

The year began with the same month name among both the Kamia and the Eastern Diegueño. I recorded the Kamia name as xashakwatL, the Eastern Diegueño name less accurately as Ilyakwel. However, the Kamia begin the year with the spring month (probably May), which bears this name, while the Eastern Diegueño begin the year with the fall month (probably November), which bears

[66] Gifford, Clans and Moieties, p. 169.

this name.[67] The order of the month names among the Kamia was close to that among the Eastern Diegueño and the six names in the two groups are cognate. The Kamia sixth-month name xashapisü was the Eastern Diegueño fourth-month name. This makes the Kamia fourth-month name xashatinya coincide with the Eastern Diegueño fifth-month name and the Kamia fifth-month name xasha.intca coincide with the Eastern Diegueño sixth-month name. Probably the two should coincide exactly and one or the other is in error.

SOLSTICES

The solstices as such seem not to have been recognized, although the long days of summer and the short days of winter were. The word ya'hispai means "day short." No sticks, shadows, or spots of light were used to determine the solstices. No theory as to the sun's approach and recession was forthcoming.

ECLIPSES

Of sun eclipses, Charles Beans knew nothing as to ancient observances. An almost total eclipse on September 10, 1923, was the first he had seen or heard of.

The more frequent moon eclipses were the occasion of observances to prevent the total extinction of the moon. Men shouted, sang, and danced. If they did not do so it was thought the moon would permanently cease to shine.

I could learn of no concept of multiple skies.

STARS

Although the Kamia had considerable star lore they had no theory as to the constitution of the stars. Several constellations were named.

The constellation Anyihai (girl) is a cluster of stars, the exact number of which the informant Narpai did not know. It is evidently the Pleiades or the Hyades. It was important in Kamia agricultural pursuits. The nyimet (wild cat) informed people in the beginning of the world that, when Anyihai appeared in the east just before dawn, they should plant their crops. The river has already inundated its banks when this occurs, and the mesquite pods have ripened under the torrid summer sun. In other words, it is midsummer. Following closely behind Anyihai, in July, rises the constellation Amuh (mountain sheep), similarly called by various

[67] Cf. Spier, Havasupai Ethnography, p. 171.

Yuman tribes (Yavapai, Mohave, Yuma, Diegueño).[68] In winter Anyihai rises after sunset. Such was the case on January 5, 1929.

Narpai said positively that the Kamia timed their planting by the appearance of the constellation Anyihai, although they knew also by the stage of the river that planting time had arrived. Planting evidently continued for some days or even weeks after the first appearance of Anyihai. Narpai stated that crops planted as Anyihai ascended the eastern sky grew well. Narpai also mentioned the two constellations Amuh (Orion) and Hecha (Pleiades), and stated that the Anyihai constellation preceded them. Charles Beans did not mention Anyihai at all, but did mention Hecha as the constellation which precedes the Amuh constellation. He described Hecha as a cluster of a "dozen or more" small stars which rises ahead of the constellation Amuh. In late December it sets about 5 a. m. The name Hecha is obviously cognate with xitcá, the Southern Diegueño name of the Pleiades[69] and with xatca the Northern Diegueño name.[70] Perhaps the Kamia Anyihai is the Hyades and Hecha is the Pleiades, or perhaps the names both denote the Pleiades.

The constellation Amuh was well known under this name to various Yuman tribes. Its name was translated as "mountain sheep." Charles Beans described it as three stars which, at Christmas, rise about 9 p. m., after the constellation Anyihai. DuBois identifies the Diegueño amú with Orion,[71] and the same identification appears certain for the Kamia.

The name Amuh was also applied specifically to the right hand one of the three stars in a row which comprise the constellation. Narpai's diagram shows, in addition to the three stars in a horizontal row, also three other stars to which he gave names as shown below. The constellation Amuh proper comprises the stars pronghorn antelope, deer, and mountain sheep. (Fig. 3.)

Narpai said the arrow point and the bow were held in the right hand of the celestial archer and the arrow pulled with the left. The two hunters, Chemehuevi and Yavapai, were sent out because they were the best archers. It was also said that the deer and the pronghorn antelope were pierced by the arrow. Kamia mythology says that in the beginning of the world the sheep, deer, and antelope were killed by the two archers. Their souls together with the souls of the archers, and the arrow, went to the sky where they are now visible as these stars.

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[68] Spier, Havasupai Ethnography, p. 172.

[69] Spier, Southern Diegueño Customs, p. 358.

[70] Waterman, p. 302.

[71] Univ. Cal. Publ. Am. Arch. and Ethn., 8, p. 165, footnote 304; cf. Waterman, same volume, p. 302, footnote 66.

Narpai explained that the three animals, antelope, deer, and sheep, were inhabitants of the mountains, which the Chemehuevi and Yavapai were skilled in climbing. The Yuma and Kamia knew the river country well, but not the mountains, and the Yuma in particular did not know how to climb the mountains.

The constellations Chiyuk and Chiyi are of considerable mythological interest. (See Mythology.) Normally they do not appear together, but in certain months when they are disappearing in the west they may be seen together. This seems to mean they are

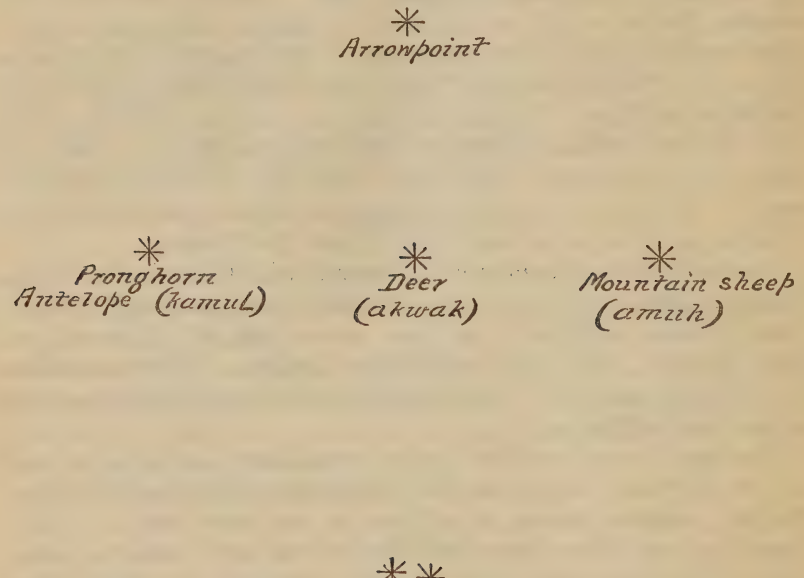

FIGURE 3.—Native drawing of constellation Amuh

simultaneously visible only as one is setting. They alternate in their appearance in the sky both winter and summer, Narpai said. Prof. C. D. Shane, University of California, considers Chiyuk to be probably the bright stars in the body of the Scorpion.

Narpai said that the arc[a] of the constellation Chiyuk is toward the constellation Anyihai (girl). (This statement makes it seem that Leo, rather than Scorpio, is the constellation Chiyuk.) It is said that the girl is planting and that Chiyuk is protecting her. The god Chiyuk is said to have made the constellation Anyihai. It was created in summer and people were instructed in the beginning of the world that that was the season they were to plant, following the annual appearance of Anyihai just before dawn.

[a] Actually he drew the stars in a nearly straight line instead of an arc (fig. 4).

On January 5, 1929, Narpai said, Chiyuk was a short distance above the horizon in the southeast before dawn. This, however, would not fit with Leo, which would be in the southwestern part of the sky just before dawn.

Chiyuk's appearance was diagrammed. (Fig. 4.) To the right of Chiyuk are many small stars, which are called foxes,[72] animals which accompanied the god Chiyuk. The arrangement of the Chiyuk stars obviously corresponds with the Diegueño constellation Cĭlúk, which Spier says "consists of an arc of stars with a secant of three larger ones."[73]

Narpai said on January 5, 1929, that in about a month (i. e., about February 5, 1929) Chiyuk would cease to be visible and that its place would then be taken by Chiyi. This is evidently the Eastern Die-

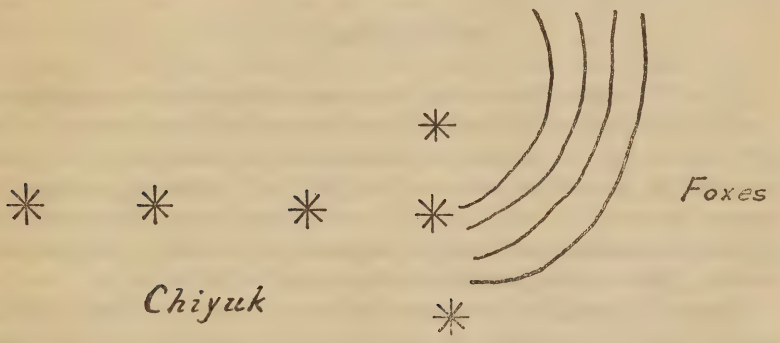

FIGURE 4.—Native drawing of constellation Chiyuk

gueño constellation Buzzard [Turkey Vulture] (ci'i),[74] which has been identified with Altair.[75] The constellation Chiyi appears as three large stars, one above another, the center star being the largest. This constellation is said to appear in the east just before dawn and on the same day as the appearance of the new moon in the west. Presumably the month of appearance is February. Of the Diegueño constellation Cĭlúk[76] Spier makes a similar statement: "In the fourth month (December or June) the constellation Cĭlúk rises in the morning while the moon is new."

Mythologically Chiyi was a good god, Chiyuk a bad god. Following the creation of the constellation Anyihai by Chiyuk, Chiyi

[72] Perhaps this is a portion of the Milky Way, which would be to the right of Leo, but not to the right of Scorpio. Scorpio fits Beans's description in so far as it is just above the southeastern horizon before dawn in January. Leo fits his description in that its arc is toward the Pleiades or Hyades (Kamia Anyihai).

[73] Spier, op. cit., p. 358.

[74] Spier, p. 358.

[75] DuBois, Religion of the Luiseño Indians, p. 162.

[76] Spier, p. 357.

sent the latter into the ground, telling him to come out in the east. "You will not stay underground forever," Chiyi said. After a time Chiyuk came out and Chiyi went into the earth and later emerged too. They alternate this way every other month (*sic*) "until Chiyuk comes out in summer." Perhaps the informant meant to say every six months or every other season.

The star Kapwatai is large and in winter appears high in the sky at sundown. In summer it rises in the morning before the sun. Capella seems to fit this description best.

COLOR SYMBOLISM

Repeated inquiry failed to yield any evidence of color symbolism, such as the Diegueño have.

ESCHATOLOGY

The information concerning souls and ghosts was obtained principally from Narpai. Charles Beans vouchsafed the statements that ghosts were seen at cremation places at night, that the spirit went to Xatsis on the western shore of the Gulf of California, and that in dreams the soul left the body. He and Narpai were both unable to say what became of the soul of a person whose body was not cremated. Beans denied that ghosts travel in whirlwinds.

Although Narpai had considerable to say about the destiny of the soul, he had never spoken on this subject at funerals, as was sometimes the custom among both the Kamia and the Cocopa. Knowledge of the destiny of the soul and the spirit was obtained through dreams.

Narpai gave the following terms for certain material and nonmaterial parts of man: amat, body; yuuspum, heart, also heart which changes into an owl after cremation of the body; kwisá, shadow; also applied to other than human shadows; matahaau, soul, apparition of living person; isaslich, invisible spirit, ghost (though it is doubtful if Kamia conceive of ghosts as we do). In the story of the mountain Wiwotat (see beyond) spirit is equated to "heart."

For "life" no term was obtained. The shadow was not related to the soul, nor was it a similar essence. A person could not be injured through his shadow.

According to Narpai an apparition of a living person could be seen, but ghosts could not. In this latter statement he disagreed with Charles Beans. Narpai said that once a person's corpse was burned there was nothing further to see.

The soul of a living person might be stolen. This caused death, unless the person were possessed of multiple souls, which was often the case. A person with more than one soul might become ill from the theft of one, but would still live. Some persons had as many as four souls, all called matahaau. Narpai did not know how the number of souls a person had might be determined. Immediately before a person died his soul could be seen leaving his body as an apparition. It went directly through the air to the land of the departed, which lay to the south of Black Butte (Wiespa) in Lower California. There it blew around with the wind until it was joined by the spirit and then the person's individuality was reconstituted. Upon leaving the body at death the invisible spirit (distinct from the soul) was then able to view its body, presumably for the first time. It lingered near its former home for four days before going south to join the soul (matahaau). During this time it visited all the places it had been during life and finally returned to the cremation place to take with it the spirit of the burned clothes. The spirit entered the ash pit, took black dirt (or charcoal?) from the bottom of the pit and rubbed this on its eyes. Upon emerging from the pit and opening its eyes, the spirit could see a long distance and the sky appeared very bright to it.

In the land of the departed in the south an individual lived, died, and was cremated four times. After each death the shape of the "body" changed. After the fourth death the individual became a black beetle or other insect. Such beetles returned to the Kamia country. No special precaution was taken not to kill them. These incarnations never become people again. At no time was there reincarnation of the soul of a deceased person in a newborn Kamia babe.

Food was not burned with the dead or at mourning ceremonies. It was given away to other people. As there was believed to be an abundance of food in the land of the departed, no food offerings were necessary. In fact, in the other world food was said to be more abundant than in this world, and people to be happy always. Mourning and sacrifice of clothes and horses were believed to benefit the departed. Nowadays horses are given away instead of being sacrificed.

If an old person died it was believed he would be rejuvenated in the other world. A man of 60 years might become a boy in the spirit world in the south.

A baby had a soul and a spirit like an adult. When a baby died its spirit was escorted to the other world by a dead relative, who came from the other world for that purpose. In the other world the baby grew to maturity. Narpai said babies were not reincarnated in this

world. In the other world they did not await the arrival of their mothers. Narpai did not know who nursed the souls of babies in the other world.

It was believed that deceased relatives came from the land of the departed to escort the spirit of a recently deceased adult, as well as a child, four days after death. For that reason the offerings burned at a funeral were not only for the person just dead but also for other dead relatives, all of whom were believed to come from the south. The dead inquired of the newcomer why their other relatives did not come. "For," they said, "where we live is a good place." The dead were not aware that they were different from living people. They cried over the newcomer, as they had not seen him for a long time.

The Kamia sometimes buried the heart of a person, in case it did not burn, in the pit with the ashes. The pit was then filled with earth. It was thought that the heart became alive and came forth from the pit as a young owl. The owl would then wander away in the bush and become adult. The informant cited, as proof of this Kamia belief, the experience of an old Yuma man, who alleged that he saw a dead person's heart a few feet away. It disappeared, then reappeared a few feet farther away. It kept doing this, taking on more and more the appearance of an owl. It was said that the body of a bad person was difficult to burn and his heart became an owl. Sometimes there was a second piling of wood on the fire in the attempt to entirely consume it. If then the heart did not burn it was buried. The rapid burning of a body was indication of a good life. Such a person's heart burned without difficulty.

Narpai's warning about my inquiries was that "a person who knows about the destiny of souls has power, but he will not live long."

DREAMS

Considering the wide potency of dreams among the Colorado River tribes, one would expect the Kamia to have an equal interest. Questioning of Charles Beans concerning dreams was particularly fruitless. His comments follow.

Dreams are best for young persons, as an old dreamer might die in his dream. Charles Beans's own dreams dealt with the place in which he lived, he said. He professed ignorance as to whether shamans dreamed much.

Knowledge of the destiny of human souls was derived through dreams.

JIMSONWEED

Jimsonweed was not taken as part of a ritual among the Kamia. Individuals sometimes took it for luck in games and shamans for the visions produced.

A decoction of the leaves was drunk. The root, used among the coastal tribes of southern California, was not used. The leaves were pounded in a small stone mortar, water mixed therewith, and the decoction drunk. The drinkers imagined they were playing peon, or catching horses, or treating a sick person. Some would sing. If a person who had taken it began pressing with his hand, people knew he was going to be a curing shaman.

The decoction was never given to boys under 15 years of age. If a boy drank jimsonweed and then ate food he would die. One must not eat salt or meat for four days after taking jimsonweed.

When several persons drank jimsonweed together under the auspices of an old shaman the latter might ask each one what he would like to gain power to do, become a lucky gambler or a shaman.

SHAMANISM

The subject of shamanism proved infertile, even though one informant (Charles Hilmiarp) was a reputed shaman, who had fled from the Kamia country to live with the Diegueño near El Cajon, San Diego County. His flight is reported to have been from fear of death at the hands of the relatives of a deceased patient. He denied all knowledge of shamanism when questioned. Narpai said that he himself had never been treated by a shaman.

The general term for shaman, especially for curing shaman, is kwisiyai. Shamans got their powers through dreams, presumably like the Yuma shamans. Charles Beans had never "felt" that he was going to be a shaman.

Curing shamans sucked their patients. Beans said he had seen shamans suck patients on the breast and belly for 10 or 12 nights. Pressing with the hand and blowing of frothy saliva over the affected part were also practiced. Scarification with a sharp stone was not practiced. Singing by the shaman for about half an hour always preceded treatment. He employed no rattle. Shamans who treated the sick were men. They also cured arrow wounds.

Arrow wounds seem to have been not uncommon. Flesh wounds from straight arrowweed shafts were easily cured. An embedded stone point, detached from the shaft of the arrow, offered difficulties and the wound was hard to cure.

Charles Beans had heard stories of shamans who could eat fire, but knew of none during his time. Perhaps those he had heard of were Cahuilla rather than Kamia shamans, for Narpai denied their presence among the Kamia. He knew of no bear shamans or rattlesnake shamans.

There were Kamia weather shamans formerly, according to Charles Beans, but none according to Narpai. These influenced the weather by singing and waving wooden wands with owl feathers attached. Owls were shot with bow and arrow by shamans only.

WITCHCRAFT

The Kamia seem to have had no fear of witchcraft of the European type. For instance, there was no fear of hair clippings or nail parings being used by some malevolently disposed person. As a result, these were treated with no more care than by ourselves. The Diegueño practice of using arrowheads about a camp site as protection against malevolent magic was unknown.[77]

Evidently the development of ideas about soul theft largely took the place of fear of witchcraft by material means.

OMENS

As with the Cocopa and Yuma, sneezing is a sign that someone is talking about the sneezer.

Narpai volunteered the information that if a bird flew into a house it was an omen of impending evil for the inmates. It meant that one of the family would die soon, and that not even a shaman could prevent it. Such a bird was thought to come from a long distance and to already embody the soul of the doomed person. It was believed that the person's soul had left sometime before and returned temporarily in bird form on this occasion. Such a bird was not harmed, though it inspired fear.

MYTHOLOGY

The informant Narpai said that he learned from old men the myths which he knew. He did not dream them. Indeed, questioning of informants failed to reveal that myths were ever dreamed, as they were among the Colorado River tribes.

Myths were related on winter nights in the sand-covered dwellings of the Kamia. The narrators were men. A raconteur stood with arms at his sides while speaking. As he proceeded he swayed his body slowly from side to side.

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[77] Spier, op. cit., p. 315.

The deities of the Kamia recall in part those of the Diegueño and in part those of the Mohave. The concept of birth from the union of earth and sky is present in weak form in Kamia mythology. The god Pukumat ultimately dies through the evil of Frog Woman. The son of Pukumat was Mastamho, a deity apparently equivalent to the Mohave Mastamho, from whom probably the name was borrowed. The concept of two deities, one blind, is also present with the Kamia. The blind one goes into the ground but later emerges. Both become constellations, Chiyuk and Chiyi.

Another widespread Yuman episode appears. It is the first mourning (keruuk) ceremony at the mountain Wikami. To this mountain is also invited the great ocean snake.

The first Kamia man was Matakwail. He sickened, died, and was cremated, but was resurrected after four days. He later died a second death, but did not return to life in this world.

Origin Tale

The earth (pakamat) and the sky lay close together when they were made in the beginning of the world.[78] Between them were the five beings, Chiyuk, Chiyi, Pukumat, Mastamho, and White Woman. Pukumat was the chief god.

Chiyuk and Chiyi reached to the west, where the sky and earth touched, and took handfuls of small red ants (chidasil). These they put on the ground and stirred around with their hands. They did this to make the earth dry, for it was wet. They appointed the god Pukumat to be their son and chief over the people. Mastamho was there as a spirit. He took Pukumat's place when the latter died, as related beyond.

Chiyuk had a brown fox (madkawar) and Chiyi had a red fox (parhau). Chiyi with his fox emerged from the earth first. Chiyuk asked: "How did you emerge?" Chiyi replied: "I looked up and opened my eyes as I came out of the earth." As Chiyuk came up with his eyes open Chiyi picked up earth and threw it in his brother's eyes, blinding him.

Chiyuk and Chiyi made the different sorts of birds, but because of his blindness Chiyuk could not make perfect birds. The mouths and feet were too big. The two brothers put green leaves in the water which sick birds drank and they became well. After making all the birds in the world they reported to Pukumat, who said "All right."

[78] The informant was contradictory as to the sex of the parents earth and sky, on one occasion making the first male and the second female, and on another occasion doing the reverse.

Chiyuk went hunting and returned home to find that Chiyi had exchanged the foxes while he was away. In anger Chiyuk went into the ground. He wanted to wreck all of this earth and to make all of the birds sick. Chiyi was left alone on the surface of the earth. He discovered the cause of the trouble and braced the earth with his hand, but diseases came up between his fingers.

Chiyuk stayed underground a month and then came up from the east. After a month he disappeared beneath the earth again. He continues to do this even now, spending a month beneath the earth and then a month above it. Above the earth he now appears as the constellation Chiyuk.

Chiyi made all the different mammals, birds, reptiles, fishes, etc., who were in human form at first, but not man. He gave them to Pukumat. At night Pukumat made a fire, so that all the people came to it. Moon attended the meeting also.

Moon said: "I want to get up and tell you about myself. One of the things I wish to tell you is that I desire to go along with the sun, but I want to die in the east. Then after four days I will be reborn in the west. I wanted to tell you this." Then Moon told the people the six month names which they were to use. "These will be my names," he said. The word for month was xasha. This was the sound which the god Pukumat made frequently during his illness, when coughing or clearing his throat.

Then Coyote (xaspa) spoke: "Moon is talking about dying and returning after four days in the west. That is all right."

Moon left for the east, where he became old. Then he went around to the west, where he appeared young. When Moon left, Pukumat was still living. The month of his death is not known.

A little bird (hanuchip) and another little bird (kwasaman) were sitting at the fire. They said: "When a bird dies, he will never return. So it will be with people, because, with babies being born right along, there would be too many people."

At this assembly around the fire there lay on the ground a small lizard (akwatl). He was silent until the sun was rising. Then he talked and immediately he died. Pukumat was with the company, but he said nothing about the dead person. Finally someone arose and asked what to do with the corpse. Pukumat said to take it east. After a few minutes another man asked Pukumat what was to be done with the dead man. Then Pukumat told them to get three poles, lay these over a hole in the ground, and burn the corpse on them. The people did that.

Frog, the daughter of Pukumat, was at the meeting too. She caused her father's death by extracting a hair from his head, putting

it in mud and throwing it to another frog, which swallowed it. That act made Pukumat sick.

Pukumat went to Mount San Jacinto, hoping that Sikapai (the god of that mountain) could cure him. But Sikapai did not know how to cure him, so Pukumat returned. Then he went to a mountain on the California-Lower California border. [This is a "cut" mountain, with a pass through it.] There the god Sikaiye, whom Pukumat besought to cure him, could do nothing for him.

Pukumat was then taken to Wikaaʟ [a little hill in Yuma, where the Southern Pacific roundhouse is now]. He could not be cured there, so he went eastward to the mountain Wiakam, where he died.

When Pukumat died his blood ran down to the ground and became Mouse (iswaikamayel). Thereafter Iswaikamayel took Pukumat's place in telling the people in what months to plant and gather crops. The people went to the mountain Wikami, leaving Iswaikamayel behind. He went about stealing food while people were away. He was the first to steal. [This mouse is found in logs as well as in the ground.]

Pukumat's body was burned on the mountain Wikami. When the funeral pyre was blazing it looked as if the mountain were afire. Before the pyre was ignited the people stood around it. They looked for fire. Coyote suggested that they get fire from the sun. So Coyote went to the sun for fire. Before he returned with it the pyre was ignited. When Coyote came to the crowd of mourners surrounding the pyre he leaped over them, seized Pukumat's heart, ran off with it, and ate it. The mountain is covered with grease from the god's heart, and hence called Grease Mountain.

After the funeral the people assembled at the mountain Wikami. [A name cognate with Mohave and Yuma Avikwame; the Kamia locate this south of Fort Mohave.] The god Mastamho presided and asked each person if he would be the leader. Donkey arose and said he would be the leader of the people. Mastamho decreed otherwise, saying: "No; you will carry water and many things on your back." Donkey replied: "No; I do not want to do that." In a few minutes he lost his human form and became a donkey.

Thereafter all the people turned into animals. Some grew feathers, some scales, some hair. Then the large birds arose, flew around, and flew back to the starting place. Then all the birds and mammals and other creatures departed, and Mastamho was left alone at Wikami.

Mastamho then created human beings. He made the Yumans first. The following morning he made the Chemehuevi, but he made them pygmies. Then he made the Mission Indians. Clay was the material of which he made men. He made 10 of each kind. The pygmies grew into full-sized men.

From the sky White Woman came to earth at Wikami. She went to the north. Mastamho said to her: "I will give you everything." Others heard this and wished to have everything, too, but Mastamho said they should settle at different places. To White Woman he gave clothing, which he told her not to burn at funerals.

Two white children were first born of White Woman in the beginning of the world. Mastamho said there would be white people in the north. He made European articles, such as coins and steel swords. He threw them all into the river, but said they would come back again. One of these swords (wotat) was picked up by a woman. (See story of the mountain Wiwotat.)

White Woman bore many children, all conceived without a man. As these children grew up they scattered over the world in all directions, especially to the south, where the country became thickly populated. They were short in stature.

After Mastamho had created all the people he said: "We have nothing here for you to use; we have no pottery."

Hidden under the ocean in the south was the great snake Mayihauchauwit, which had been created by the gods Chiyuk and Chiyi. It was spotted with various colors and was the repository of knowledge.

Mastamho conceived the idea of inviting the great snake to come to the mountain Wikami to attend the mourning (keruuk) ceremony, which the Kamia and other peoples were to hold. He sent a Kamia to invite the monster.

The snake came and entered the keruuk house, but there was room for only half his body. Therefore they enlarged the house so that he could get his entire body within it. The people who were sitting in the house when the snake arrived had to leave it to make room for him.

Mastamho said: "We should not allow Mayihauchauwit to return to his home. We must burn the house and his body, so that you tribes will get the different songs from his body." Then they burned the house with the monster in it and the songs issued from his body as spirit persons. Thus the various tribes got their songs. The Kamia obtained a mourning (keruuk) song cycle, chayautai song cycle, nonyumer song cycle (which the Mohave are said also to have), tomanp song cycle, tomanpkwel song cycle, and tatmayuher song cycle. The last four are said to have issued forth as spirit persons from the second (chayautai). The Cocopa also sing some chayautai songs. Tipai songs were not obtained on this occasion, though they are Kamia songs, sung by both Kamia and Diegueño.

Mastamho now told the people that they should leave the mountain Wikami and go to their future lands. Because they walked in the

river water, the tribes became brown skinned. The Mohave settled in the vicinity of the mountain. Some Chemehuevi went a short way to the north, others to the south. The other tribes moved south. Three stopped at Blythe; the Maricopa (Hatpa.inya in Kamia), the Kohuana (Kowan in Kamia), and the Halchidhoma (Halchiyom in Kamia). The other tribes came on south to Yuma, where the Colorado River passes between two bluffs. Some of the Yuma stopped there to take possession of the land in the vicinity. On the hill where the agency buildings now stand they put up their right hands and said: "We are going to take this land on the north side and the south side." Other Yuma went on to the mountain Wikunyai in Lower California, where they stopped. There they lived many years, planting there a kind of food called hatsot. This was a small orange-colored fruit which grows on shrubs about as tall as a man. After a time the Yuma moved to Kwasit, where there were big rocks. [This is on the Mexican side of the international boundary. Yuma lived at Kwasit until gathered on the present reservation. Kadjor, a man living in 1929, once lived at Kwasit.]

Two more tribes came from the north. They followed along the Colorado River and finally stopped at Matkakan (Colonia Lerdo, Lower California). They were the Cocopa and Akwa'ala.

The Kamia came part way with the Yuma, then left them and went to the eastern shore of the Salton Sea.[79] The sea [probably Blake's Sea] was large then and where El Centro is now there was sea. Later they moved to Indian Wells (Xachupai) and to Saxnuwai (near Holtville). There were ten men of each tribe. The ten Kamia men were the ancestors of ten lineages. Some of the Kamia passed through Imperial Valley into the mountains of San Diego County and became the Diegueño. There they had no seeds to plant, but found wild plant foods, deer, and mountain sheep.

The tribes of Mission Indians were also near the [presumably present] southern end of Salton Sea. They became afraid of the Kamia, hence the Cahuilla and other Shoshonean tribes fled northwestward.

Later there came from the mountain Wikami three persons who were to be the Kamia leaders. They were a hermaphrodite [described by the informant as half man, half woman] called Warharmi [cf. Mohave hwami] and her twin "sons" [not really her sons, Narpai said], both called Madkwahomai. These three had learned much at Wikami. They came south along the Colorado River. They found the feathers of birds which had died, as they traveled along day after day. The feathers were of the birds kak (crow),

[79] Narpai mentioned old metates plowed up by farmers on the east side of Imperial Valley as evidence of the Kamia having been there.

tokwil, and kusaul. The three travelers made headdresses of these feathers and painted their faces as for war. They brought bows, arrows, and clubs.

From the Colorado River at Yuma they crossed over to Imperial Valley. Their appearance so frightened the Kamia that they fled in all directions. One Kamia woman did not flee before the three. She was married by one of the Madkwahomai twins. Then the three newcomers and the woman settled at Saxnuwai.

The seeds of maize and beans [80] had been given them by Mastamho. These the three travelers brought from Wikami and planted at Saxnuwai, thus introducing cultivation in the Imperial Valley. Those Diegueño who had gone to the mountains to live failed to receive the seeds. The three travelers brought the seeds of certain wild plants as well.

At Saxnuwai, Warharmi and the twins planted, for they found wet ground there. Before their departure from Wikami Mastamho had explained how everything was to be done. He had said that Warharmi and the two Madkwahomai were to be farmers and that they should go to dwell among the Kamia, whom Mastamho had sent to live on the shores of the Salton Sea.

The two Madkwahomai had brought bows, arrows, and clubs, which had been unknown to the Kamia hitherto. The twins called a conclave of the Kamia at Saxnuwai and there gave bows and arrows to each lineage and instructed the people in their use. One lineage asked what use the weapons would be and one of the twins replied that they would need them for war. The Yuma did not receive the bow and arrow. They had been given the feathered stabbing pike (akwil) by Mastamho at Wikami. He said that they would use that weapon in the mourning (keruuk) ceremony and that he would help them make the ceremony. The two Madkwahomai asked the Yuma to bring the akwil and show the Kamia at Saxnuwai.

Thereafter the different tribes formed alliances and began to fight. The Mission Indians formed one group. In another were the Kamia, Yuma, Mohave, Chemehuevi, and "Apache" (Yavapai). In a third alliance were the Cocopa, Maricopa, and Pima.

The Madkwahomai who married the Kamia woman begot twins. The people were astonished at this dual birth and asked the husband what was wrong. The jealous suspicions of the married brother were aroused against his twin brother. The unmarried brother answered, saying: "You know why you have twins. It is because you are my son (*sic*). That is why you have boy twins." The

[80] The informant Narpai included cowpeas as well as teparies.

husband believed him. Later, twins were born to other women, until the whole Kamia tribe was made up of twins. [The lineage of these various people was not known to the informants.]

Deer, Sheep, and Antelope

Deer was in the south. He traveled to the east with his two wives, Mountain Sheep (ᵃmuh) and Pronghorn Antelope (kamuL). From the east they traveled westward, Mountain Sheep leading, followed by Deer, who was followed by Pronghorn Antelope. Each woman carried her baby. When they reached the middle of the world Deer died, being killed with an arrow from the bow of a Chemehuevi hunter and a Yavapai hunter. Before his death Deer had directed the two women as to where they should go.

Mountain Sheep said to her dead husband: "You are not a real mountain sheep. You are a deer." Therefore the two women went on. Mountain Sheep woman went to the mountain Winyai, near the Cocopa Mountains in Lower California. Deer had told her not to go where there was brush, but to follow around the edge of the mountains. This led her southward to Winyai. There the Cocopa hunt the mountain sheep. There she bore twins who were deer. She said to them that they were not like herself. So the young deer left her and went eastward, taking up their residence along the Colorado River.

Pronghorn Antelope went on westward with her baby until she reached the mountains of Diegueño territory. There the Diegueño hunt antelopes.

Deer had told the two women where to go before he died. After death his spirit went to heaven. He can be seen in the sky now, with the arrow through him. His wives' spirits rose to the sky and became stars also, after their death on earth.

The Mountain Wiwotat

On the Californian side of the Colorado River, near Parker, is said to be a sword-shaped peak called Wiwotat. This mountain was originally a steel sword (wotat) which a woman named Okosinuhau had found, picked up for a game, and stuck upright in the ground beside her house. She said it would be of use to some warrior. After it was used as described below, it became a peak.

A Kamia man was stabbed through from side to side with the sword, and struck in the head with a club and killed. Then his slayers departed. The spirit of the dead man viewed his body from a distance and thought it was a log. Then his spirit ("heart") reanimated his body and he was alive again. He walked home, but his wife was much frightened because of his wounds. He recovered.

ETHICS

Not much was learned as to ethical standards. The principal qualifications of a good person were that he was a "truth speaker" and generous; of a bad person that he was a liar and stingy.

Narpai feared that telling me all he knew about Kamia culture would shorten his life. He said he felt like a young person, because "not knowing much."

JOKES

Only one example of a Kamia joke was recorded.

A young Kamia married woman asked my informant Narpai if a Yuma neighbor had gone to work that morning. Narpai replied: "Yes. He went out and washed an unmarried woman's body." Actually the neighbor had gone to bale hay for an American.

ORIGIN OF THE KAMIA

Native opinions, apart from myths, as to the origin of the Kamia were expressed as follows:

Charles Beans thought that the Kamia were of mountain origin, descending about 300 years ago from the mountains of San Diego County. He was certain that they had long been in Imperial Valley at the time of the fight in 1855, mentioned by Spier.[81]

Old Jose said that the Kamia came from the north, near Parker, in search of good land. The place whence they came was Matkwatl.[82] The Diegueño were already in their mountain habitat when the Kamia arrived in Imperial Valley. The statement of northern origin corresponds with the mythology as recorded above. Bourke quotes the Mohave as deriving the Kamia from the north, i. e., "from a point on the Colorado River, about Cottonwood Island, near a big stone."[83]

The traditional statement (see Origin Tale) of the Kamia that the waters of the Salton Sea stood over the site of El Centro when their ancestors entered Imperial Valley is not improbable. The "sea," however, was not an arm of the Gulf of California, but was a fresh-water lake.[84] For such a large fresh-water lake to stand in Imperial Valley it would be necessary for the flow of the Colorado

[81] Spier, op. cit., p. 299, says the Yuma were the people whom the Diegueño and Kamia fought. The Kamia say it must have been the Cocopa, as the Yuma were friends.

[82] Possibly I misunderstood the informant and this name is really Matakwail, the first Kamia man. See p. 75.

[83] Bourke, p. 176.

[84] Kniffen, ms., p. 70.

River to be into the valley instead of into the Gulf of California, as was the case in 1905.

Kniffen does not give any definite date for the last occurrence of a fresh-water lake in Imperial Valley, but he sums up the matter as follows:

"The desiccation of the Salton Sink area is an event geologically very recent. This assertion is borne out by the freshness of the old beach line, and by the Indian carvings in the tufa. The ancient lake represents a brief incident, for nowhere along the old beach line did the waves cut deeply into the solid rock. The undissected nature of the north delta slope [Kamia territory] offers proof of the recency with which water stood in the basin." [85]

The record of explorers possibly offers a minimum date for the flow of the Colorado River into Imperial Valley, and, consequently, for the entry of the Kamia when a large body of water was there. Again quoting Kniffen: [86] "As Grunsky suggests: from Diaz and Alarcon in 1540 to Ives in 1857 there is no intimation that the river had any other course than that which it maintained previous to 1905." If we can accept at face value the Kamia statement that the waters covered the site of El Centro when their ancestors entered Imperial Valley, and if we can be certain that the waters have not covered the valley since 1540, then the Kamia entry into the valley must have been before 1540. However, the last flooding of the valley may have been subsequent to 1540, for long periods elapsed in which no white man left a record of the valley conditions. A lake filling the valley would evaporate in 50 years if the flow of water into it were stopped.[87] Such a lake may have been present in the long intervals between the visits of early explorers to the Colorado River.

The cultural resemblances of the Kamia to the Yuma do not offer a satisfactory criterion for estimating the length of residence of the Kamia in Imperial Valley. On the one hand there seems no inherent reason why these cultural resemblances could not have been acquired in a century, but on the other hand there is no reason why they may not have endured for 10 centuries. The culture of the Colorado River tribes as known today was apparently in full bloom in 1540, judging from the records of the Alarcon expedition.

CONCLUSION

Kamia culture is preponderantly Yuma rather than Diegueño (Eastern and Western) in its affinities. Leaving out those traits which are alike in the three groups and considering only those of unlike character, we find that out of 46 such traits Kamia shares 30

[85] Ms., pp. 70–71.
[86] Ms., p. 67.
[87] W. B. Clapp, loc. cit.

with Yuma against only 8 with Diegueño. Six traits appear peculiar to Kamia and 2 are intermediate in character between the Yuma and the Diegueño aspects of the traits.

The following are the data upon which the above assertions are based. D, K, and Y stands for Diegueño, Kamia, and Yuma.

1. Acorns: D used, K used when obtained, Y not used.
2. Agriculture: D no, K and Y yes.
3. Tobacco: D present, K and Y imported.
4. Pipe of cane: D and Y also other types, K cane only.
5. Fish shooting: D no, K and Y yes.
6. Fish scoop: D no, K and Y yes.
7. Seine net: D no, K and Y yes.
8. Fishhooks: D absent, K and Y of cactus spine.
9. Fish stew: D no, K and Y yes.
10. Wooden mortar: D no, K and Y yes.
11. Wooden pestle: D no, K and Y yes.
12. Pottery: D unpainted, K painted after firing, Y painted before firing.
13. Balsa: D no, K yes, Y no.
14. Rectangular sand-covered house: D no, K and Y yes.
15. Sweathouse: D yes, K and Y no.
16. Basketry: D yes, K no, Y yes.
17. Mescal-fiber sandals: D yes, K and Y no.
18. Men's hair in pencil rolls: D no, K and Y yes.
19. Weaving of willow bark: D no, K and Y yes.
20. Hide shield: D no, K and Y yes.
21. Mallet club: D no, K and Y yes.
22. "Flag" or stabbing pike: D no, K and Y yes.
23. Hoop and dart game: D yes, K no, Y yes.
24. Totemic gentes: D absent, K in part, Y present.
25. Women's totemic names: D and K no, Y yes.
26. Chief: D of lineage, K and Y of tribe.
27. Chief: D hereditary, K and Y not hereditary.
28. Jimsonweed initiation for boys: D general, K absent, Y partial.
29. Part of jimsonweed used: D root, K leaves used privately, Y leaves.
30. Disposal of ashes of dead: D in urn, K and Y in ground.
31. Image ceremony: D and K yes, Y formerly absent.
32. Shade for image ceremony: D and K semicircular, Y rectangular.
33. Eagle sacrifice: D and K yes, Y no.
34. Mock combat mourning ceremony: D and K no, Y yes.
35. Dances solely of Colorado River type: D no, K and Y yes.
36. Abode of dead: D east, K and Y south.
37. Origin place of man: D east, K and Y north.
38. Witchcraft: D yes, K no, Y yes.
39. Sand painting: D yes, K and Y no.
40. Year begins: D November, K and Y May.
41. Turtle-shell rattle: D present, K and Y absent.
42. Moon ceremony: D (W) and K yes, D (E) and Y no.
43. Earth oven: D present, K and Y absent.
44. Wells: D absent, K and Y present.
45. Mocking birds caged: D and K yes, Y no.
46. Arrow straightener: D grooved, K and Y ridged (Mohave type).

Seventeen traits have been recorded for the Kamia and Yuma, but nothing concerning them has been recorded for the Diegueño. Of these seventeen, fifteen are similar with both the Kamia and the Yuma, while only two are dissimilar. This incomplete evidence appears to be weighted strongly in favor of Yuma influence. The lack of record for the Diegueño renders this interpretation tentative, even though lack of evidence may mean absence among the Diegueño. The traits involved are listed below.

1. Boomerang: K yes, Y no.
2. Quiver: K skin, Y skin.
3. War paint: K black, Y black.
4. Shell nose pendant: K yes, Y yes.
5. Staff for aged: K yes, Y yes.
6. Cradle of Colorado River type: K yes, Y yes.
7. Foot-cast ball: K yes, Y yes.
8. Shinny: K yes, Y yes.
9. Dogs: K yes, Y yes.
10. Childbirth: K seated, Y seated.
11. Twins: K welcomed, Y welcomed.
12. Puberty scratching stick: K yes, Y yes.
13. Nose piercing a male puberty rite: K yes, Y yes.
14. Transvestites: K yes, Y yes.
15. Mythology dreamed: K no, Y yes.
16. Disease by soul theft: K yes, Y yes.
17. Cradle carried on top of head: K yes, Y yes.

Three traits have been recorded for the Kamia and Diegueño but nothing concerning them for the Yuma. Of these three, two are similar for the Kamia and Diegueño, while one is dissimilar. The traits involved are listed below.

1. Bedrock mortar: K no, D yes.
2. Whistle: K yes, D yes.
3. Calendar of six repeated month names: K yes, D yes.

Many of the parallels between Kamia and Yuma may be adjustments to a similar environment, or, to state it a little differently, they may represent a single type of culture spread over a uniform environment. The environment may be described as the flood plains of the Colorado and its delta, which are bordered by desert.

The eight traits which the Kamia share with the Diegueño are, so to speak, superenvironmental, with the single exception of the use of acorns. The remaining seven traits are social and ceremonial.

Adjustment to the physical environment is a much more mandatory matter than adjustment to the social and religious environment. The Kamia case is roughly parallel, therefore, to the historic case of the English colonists in New England. They adopted Indian agriculture but not Indian religion or social organization. The case of the colonists makes it obvious that such acculturation may be a very

rapid process. The Kamia acculturation may have progressed with equal rapidity. When it took place, however, is quite another question and one which all of the information at hand does not enable us to solve. If the Cumana[88] encountered by Alarcon in 1540 were Kamia, and it seems unlikely that they were, then the time of acculturation was certainly prior to that date. The next reference to the Kamia is in 1781, when Fages apparently differentiates between Imperial Valley people, who appear to have been the Cajuenche or Kohuana, and mountain Kamia or Diegueño. Only about 1850 do we get unequivocal testimony, both from the literature and modern informants, of the presence of the Kamia in Imperial Valley from 1800 on (see Introduction). It is therefore possible that the entry of the Kamia into Imperial Valley and their acculturation to the Yuma type may all have occurred within the nineteenth century. However, the movement into Imperial Valley was something more than the drifting in of Eastern Diegueño, for it must be remembered that only a portion of the Kamia lineages have the names of Eastern Diegueño lineages. The others have the names of Western Diegueño lineages. Possibly the Spanish pressure of Mission days was a contributing factor in the movement into Imperial Valley.

[88] Kroeber, Yuman Tribes, p. 484.

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INDEX

	Page
Acorn mush—	
manner of eating	28
method of cooking	27
Acorns, use of, for food	23
Adultery, attitude toward	56
Age terms	51–52
Aged people—	
structures occupied by	20–21
treatment of	27, 52
Agriculture—	
adopted from the Yuma	1
by irrigation	5
discussion of	21–23
See also Planting.	
Akwa'ala—	
Kamia name for	18
mention of	3
relations of, with Kamia	16
Akwil nuts, collecting of	8
Alamo River, lineages on	12
Algodones, Kamia at	7
Allies of the Kamia	3
Amador brothers, lineage membership of	16
Amador, Mrs., lineage membership of	16
Anemopsis californica, use of	24
Apache, allies of the Kamia	3
Arrow straighteners, use of	29
Arrowpoints, stone, method of making	28
Arrows—	
types of	28–29
See also Bow and arrow.	
Arrowweed, used as roofing	19, 20
Atriplex torreyi, use of	24
Babies—	
belief concerning souls of	71–72
method of carrying	40
Ball game, played by men	45
Bark, used for making fiber	32
Barley, Mike, mention of	58
Barley, Sam, mention of	57
Basketry	39
Beads—	Page
former use of	55
made of clamshell	37
worn pendent from nose	54
Beadwork, absence of	33
Beans, Charles—	
an informant	9
funeral oration by	57
lineage membership of	15
Beds and bedding	20
Beliefs—	
concerning birds	48
concerning deities	75
concerning dreams	72
concerning food	71
concerning ghosts	70
concerning reincarnation	71
concerning souls	48, 71–72
concerning the heart	70, 72
concerning the moon	65
concerning witchcraft	74
in omens	74
See also Ethics; Taboos.	
Bird cages, making of, described	48–49
Birds, beliefs and customs concerning	47–50
Blankets—	
making of	32–33
rabbit-skin	33
Boats, described	43
Boomerang, use of	26, 28
Bow and arrow—	
described	28–29
fish killed with	26
Breechclouts, woven like blankets	33
Burdens, manner of carrying	40
Burial customs. *See* Mortuary customs.	
Cactus, barrel, use of	26
Cahuilla, relations of, with the Kamia	17
See also Desert Cahuilla.	
Cajuenche. *See* Kohuana.	

4089°—31——7

	Page
Calendar system	65
Camillares, mention of	2
Carrying nets	40
Cat's cradle, game of	47
Ceremony—	
of killing eagles	50
of mourning	58
of nose piercing	54
Chemehuevi—	
allies of the Kamia	3
Kamia name for	18
myth concerning creation of	77
Chemehuevi chief, information from	3
Chief—	
assistant to	51
duties of	51
house of	18
selection of	50
Childbirth, customs concerning	52
Children—	
manner of carrying	40
naming of	61
Chiyi, myth of	69–70
Chiyuk—	
constellation of	69
myth of	69–70
Circumcision, not practiced	37
Clamshell, beads made from	37, 54
Clans. *See* Lineages.	
Climate of Imperial Valley	4–5
Clothing—	
burned for the dead	59
of the Kamia	32–34
See also Sandals.	
Clubs. *See* War club.	
Coclum, Pablo, a Yuman chief	1, 6
Cocopa—	
beginning of country of	8
habitat of	18
Kamia and Diegueño attacked by	8
Kamia name for	18
relations of, with Kamia	16
war with	31
Color symbolism, no evidence of	70
Colorado River, Indian name for	7
Comedas, mention of	3
Comeya, identification of	3
Comoyalis, mention of	2
Comoyatz, mention of	3
Constellations, named by the Kamia	66–67
Cooking, methods of	24, 27
Coyote, as a totem	14
Cradles, description of	39
Creation story	77
Cremation, practice of	56
Cultural features, comparison of	83–85
Culture, Kamia, preponderantly Yuma	83
Curo, Latu, lineage membership of	16
Cyperus erythrorrhizos, use of	24
Dancing—	
described	62
manner of, at mourning ceremony	59–60
Day, divisions of	65
Death, beliefs concerning	70–72
See also Mortuary customs.	
Deer, customs connected with hunting of	27
Deer Peak, identification of	9
Deities, of the Kamia	75
Desert Cahuilla, valley occupied by	4
Diegueño Indians—	
characteristic dances of	62
connections of, with the Kamia	1–2, 3, 10, 16, 17, 23
Kamia name for	18
origin story of	12, 79
traits of, shared with Kamia	83–85
Digging stick, use of	43
Dogs, among the Kamia	47
Dreams, belief concerning	72
Dwellings—	
described	18–20
location of	20
Eagles—	
keeping of	49
sacrifice of	49–50
Earthquakes, occurrence of	4
Eastwood, Miss Alice, acknowledgment to	24
Eating, manner of	27–28
Eclipses, knowledge of	66
Environment, adjustment to	85
Eschatology, of the Kamia	53, 70-72
Espayan, a camping place of the Kamia	8
Ethics, of the Kamia	82
Exogamy, among the Kamia	12
Facial painting	34–35

Page

FAMILY LIFE 19–20
FEATHERS—
on arrows 28
on stabbing pike 48
used in mourning ceremony 49, 59
wearing of 47
FERNANDO, CHIEF—
brief account of 51
reference to 7, 16
FIBER, preparation and use of 32
FIRE DRILL, use of 42
FIRES, management of 20
FISH, Kamia names for 26
FISH SCOOP, making of, described 25
FISHING, methods of 25–26
FLUTE, CANE, manner of playing 43
FOOD—
belief concerning 71
birds used for 48
pounded in mortar 41
wild plants used for 23–24
FOOD PLANTS—
cultivation of 21–23
wild 23–24
See also PLANTING.
FOOT RACES 45
FUNERAL CEREMONIES 56–58
FUNERAL PYRE, construction of 58
GAME. *See* HUNTING.
GAMES, of the Kamia 44–47
GHOSTS, conception of 70
GOURDS, rattles made of 44
GRANARIES, described 40
GRAY, JOHN, reference to 64
GRINNELL, PROF. JOSEPH, reference to 14
HABITAT, of the Kamia 1, 2, 3–9
HABITATIONS, described 18–20
HAIR—
girdles made of 34
removal of 36
HAIR CUTTING, as a sign of mourning 56
HAIRDRESSING 36–37
HALCHIDHOMA:
habitat of 18
Kamia name for 18
HALYIKWAMAI, known of, by Kamia 18
HAMECHUWA, a Kamia rancheria or band 8
HANDKERCHIEF, worn over hair 37
HARRY, lineage membership of 15

Page

HATAWA, a Kamia rancheria or band 8
HEART OF THE DEAD—
belief concerning 70, 72
custom concerning 57
HEPOWWOO, a Kamia rancheria or band 8
HERBERT, JUANITA, lineage membership of 16
HILMIARP, CHARLES—
informant 10
lineage membership of 15
HOUSES. *See* DWELLINGS.
HUERTA, a planting place 5
HUNTING, methods of 26
IMAGES, ceremonial use of 60
IMMORTALITY. *See* SOUL.
IMPERIAL VALLEY—
changes in 83
described 3–9
movement into 86
IMPLEMENTS—
of war 31
wooden 31
INDIAN WELLS—
abandoned 6
location of 5–6
INFORMANTS, list of 9–10
IRRIGATION—
at Jacumba 22
in Imperial Valley 5
ITAYWIY, a Kamia rancheria or band 8
JACK RABBITS, hunting of 27
JACUMBA—
agriculture at 22
lineages at 11
mention of 16, 17
JIMSONWEED, effect of drinking 73
JOSE—
an informant 6, 9–10
characterization of 10
lineage membership of 15
JUARAR, MRS. JOSE, lineage membership of 16
JUGGLING, practiced by girls 44
KANE SPRING, not in Kamia territory 9
KERUUK. *See* MOURNING CEREMONY.
KILIWI, known of, by Kamia 18
KNIVES, STONE 29

KOHUANA— Page
affiliations of 17
Kamia name for 18
LANGUAGE OF THE KAMIA 1
LICE, method of exterminating 36
LINEAGE NAMES—
for men 62
for women 12, 62
meanings of 13
LINEAGES, DIEGUEÑO, list of 11
LINEAGES, KAMIA 10–16
association of, with songs 63
exogamous 12
localization of 12, 15
patrilineal 12
MACHAM, reference to 63, 64
MAPS, locating the Kamia 3
MARRIAGE CUSTOMS 55–56
MEDICINE. *See* SHAMANISM.
MEN, dress of 34
MENSTRUATION, customs concerning 53
MESCAL ROOT, used for food 23
MESQUITE BEANS, quantities of 6
MESQUITE TREE, pod of, used for food 23
METATES, described 41
MICHUL, a camping place of the Kamia 8
MISSION INDIANS, SHOSHONEAN, Kamia name for 18
MOCCASINS, not used 38
MOCKINGBIRDS—
belief concerning 48
kept in cages 48
MOHAVE—
allies of the Kamia 3
Kamia name for 18
MONTHS, of the year 65–66
MOON—
beliefs concerning 65
names for phases of 65
MORTARS—
described 40–41
use of 24
MORTUARY CUSTOMS 20, 48, 56–58
MOTHER-IN-LAW TABOO, absence of 55
MOUNTAIN, SACRED 2
MOURNING CEREMONIES—
feathers used in 49
observance of 58–61
songs of 63
MOURNING CUSTOMS 30, 37, 44, 56, 58–61, 71
MULLER, method of using 42
MUSIC. *See* SONGS.
MUSICAL INSTRUMENTS 43–44
MUTILATION, practice of 37
MYTHOLOGY OF THE KAMIA 13–14, 63
MYTHS—
of Chiyi and Chiyuk 69–70
of the deer, sheep, and antelope 81
of the mountain Wiwotat 81
of the two hunters 67
relating of 74
NAMES—
change of 61
Kamia, for various tribes 18
personal 61–62
used by the Kamia 17
See also TERMS.
NAMING CUSTOMS 61–62
NARPAI—
a full-blood Kamia 9
an informant 6, 7, 8, 9
characterization of 10
lineage membership of 16
meaning of the name 62
NARPAI, ROSA—
an informant 10
blanket made by 32
lineage membership of 16
NEIGHBORS OF THE KAMIA 16–18
NEW RIVER—
a slough 6
variable conditions of 6
NILAND, not in Kamia territory 9
NOSE, piercing of 54
NOSE ORNAMENTS 37, 38
NUMERAL SYSTEM OF THE KAMIA 64
OFFERINGS TO THE DEAD 59
OMENS, belief in 74
ORATION, FUNERAL 57
ORIGIN OF THE KAMIA 1, 10, 82–83
ORIGIN MYTH 12, 75–81
ORNAMENTS. *See* BEADS; PENDANTS.
ORTEGA, last Kamia chief 51
OWL, belief concerning 70, 72
PASQUAL, Yuma chief, story concerning 31
PENDANTS, worn by men 37–38, 54
PEON, game of 46–47

Page

Pestles, described 41
Pigments 34–35, 36
Pike, use of 30
Pipes, not used 25
Planting—
  places selected for 5, 6, 7
  timed by the stars 66–67
Plants—
  cultivation of 21–23
  wild, used for food 23–24
Polygamy, practice of 55–56
Population of the Kamia 3, 16
Pottery—
  described 42
  rattles of 44
Property of the dead, disposition of 57
Property rights 48
Prosopis juliflora, use of 23
Prosopis pubescens, use of 23
Puberty customs 35, 53, 54, 61
Pyre. *See* Funeral pyre.
Quathlmetha, a Kamia rancheria or band 8
Quemaya, identification of 2
Quivers, described 29
Rabbits, hunting of 26
Rainfall, in the Kamia country 4
Rattles, three types of 44
Reincarnation, belief concerning 71
Relationship terms, used in place of personal names 62
Sacrifice, of eagles 49–50
Salt, means of obtaining 24
Salton Sea—
  evaporation of 4, 5
  former area of 82–83
  Kamia located on 4
  origin of 4–5
Salton Sink area, desiccation of 83
Sandals—
  used by Kamia 38
  worn by Quemaya 2
Saxnuwai, a planting place 6–7
Scarification, not practiced 37
Schenck, W. Egbert, acknowledgment to 5
Seeds—
  method of planting 22
  use of, for food 24
Seven Wells, Kamia at 8
Shadow, beliefs concerning 70
Shamanism 73–74

Page

Shane, Prof. C. D., reference to 68
Shield, used by Kamia 30–31
Shinney game, described 45
Shooting contests 45
Shoshonean groups, possible influence of 15
Sick, the, treatment of 73
Silt, depth of, in Imperial Valley 4
Sipankwoxi, a Diegueño chief 51, 63
Snake, Great, story of 78
Solstices, not recognized 66
Sonchus oleraceus, use of 24
Song cycles—
  Diegueño 64
  Kamia 62–64
Songs—
  connected with dancing 63
  occasions for 63
  transmission of 63
  used in treatment of the sick 73
Souls, beliefs concerning 48, 70–72
Spirit, beliefs concerning 70–72
Springs in Imperial Valley 8
Stabbing pike, described 30
Staff, use of 38
Standard bearers 30
Stars, Kamia knowledge of 66
Stave game, described 45–46
Steatite, used for arrow straighteners 29
Stone work 29
Structure, mourning, described 58–59
Sweathouse—
  described 21
  use of 21
Symbolism. *See* Color symbolism.
Taboos—
  concerning childbirth 52
  concerning eagle keeper 49
  concerning food 48
  concerning funeral pyre 58
  concerning hunting 27
  concerning menstruation 53
  concerning names 56
  concerning pregnancy 55
  concerning puberty 53, 54
  concerning the dead 56
Tattooing—
  for men 36
  for women 35

	Page
TERMS—	
used to indicate age	51–52
See also RELATIONSHIP TERMS.	
TIGER—	
as totem	13
myths concerning	13–14
TOBACCO, use of	25, 61
TOMEXAMAN, last Kamia chief	51
TOTEMS, associated with lineages	13–14
TOYS	47
TRADE WITH THE DIEGUEÑO	23
TRAIL, across Imperial Valley	8
TRANSVESTITES, occurrence of	56
TULE, use of, for food	23
TWINS, attitude toward	53
UMBILICAL CORD, treatment of	52
VARGAS, MRS., lineage membership of	16
VILLAGES, absence of	5, 18
WAILING, custom of	56
WAR CLUB, made of wood	30
WARFARE, implements of	31
WARS OF THE KAMIA	31
WEAVING	32–34
WELLS, digging of	9
WHEAT, WILD, gathered by Indians	22–23
WHISTLES, described	43
WIKELEL, a Kamia camping place	8
WIKWINIL—	
lineages at	11
location of	6
WILDCAT—	
as totem	13
myths concerning	13–14
WITCHCRAFT, no fear of	74
WOMEN—	
dress of	34
games of	44, 45–46
posture of	38
restriction concerning	50
WOOD, artifacts of	31
WRIST GUARD, use of	28
XACHUPAI, reference to	3
See also INDIAN WELLS.	
XAKWINIMIS, a Kamia place name	8–9
XATAUWIL, water obtained at	17
XATOPET—	
a planting place	5, 6
application of the name	7
lineages at	12
XOTCUXOTC, lineage membership of	15
YAVAPAI, Kamia name for	18
YUHA SPRING, a stopping place	8
YUMA—	
affiliations of	18
allies of the Kamia	3
culture of, like Kamia	83
custom of	49
friendly neighbors of the Kamia	16
habitat of	18
influence of, on Kamia	1, 51
Kamia name for	18
territory of	4
traits of, shared with Kamia	83–85
YUMA CHIEF, information from	3
YUMA, JOE, lineage membership of	15

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